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**SWAZI WOMEN FARMERS:  
ROLES AND RESPONSIBILITIES  
IN AGRICULTURAL PRODUCTION SYSTEMS**



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SWAZI WOMEN FARMERS:  
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## PREFACE

The South-East Consortium for International Development (SECID) is a non-profit organization composed of thirty-four research and academic institutions located in the southern and eastern United States. SECID provides research, training, and technical assistance to developing countries. In 1980, SECID established the Center for Women in Development with funding from the Office of Women in Development at the Agency for International Development. The Center's primary objective is to ensure that women, as agents and beneficiaries, are included in all phases of SECID's development initiatives. This has included working with SECID member institutions to identify and utilize qualified women faculty and with SECID's overseas projects on design and implementation.

In 1981, the Center established the International Fellowship Program in Technical Assistance. This program was designed to respond to several critical needs in the area of women in development by: 1) increasing opportunities for women to gain international experience; 2) advancing important WID issues via a balanced approach of research and direct participation in community development activities; and 3) integrating WID approaches and issues into existing SECID projects.

In 1983 Christine Roach, as a graduate student at the University of Maryland-College Park in the Department of International Community Development, spent three months in Swaziland as a Technical Assistant for SECID/CWID. With another SECID/CWID Technical Assistant, Carolyn Sachs, a Rural Sociologist at Pennsylvania State University, Roach conducted surveys on women's roles in agriculture in the Swazi Nation Land. Her study addresses the issues of labor division, homestead composition, and marketing patterns in the region. In addition, she discusses women's access to agricultural extension, credit, and land. Roach's report and recommendations are presented here.

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## INTRODUCTION

When compared with many other African nations, the Kingdom of Swaziland has achieved substantial growth and improvement within many sectors of the economy in recent years. Nonetheless, future economic development strategies must contend with several social and economic conditions that threaten the progress of economic growth. According to the United States Agency for International Development (USAID) "Country Development Strategy Statement, Update: Fiscal Year 1985," these conditions include:

- o The stagnation of the agricultural sector (most particularly small-scale farmers, producing on Swazi Nation Land, which comprises approximately 60 percent of the total land area of Swaziland;
- o A substantial decrease in wage-employment opportunities within Swaziland and in the Republic of South Africa; and
- o The existence of a large balance of trade deficit and an increase in the public debt created by loans secured from international lending institutions.

However, another crucial factor that restricts economic growth within the traditional sector and contributes to the continuing stagnation of the traditional agricultural sector may be the underutilization of human resources, particularly the failure of governmental policies and programs to integrate women adequately into national economic strategies.

In an effort to combat the economic difficulties caused by the lack of agricultural growth, rising unemployment, and an increasing national deficit, the Government of Swaziland (GOS) and international donor agencies have stressed the importance of establishing effective measures to increase overall agricultural development within Swaziland. Currently, the GOS, USAID, and other donor agencies are actively involved in addressing the goal of increasing agricultural production on Swazi Nation Land through several on-going and proposed development projects, including:

- o the GOS Rural Development Areas Programme which provides infrastructural development, agricultural extension assistance and training, and a source of agricultural inputs and equipment; and
- o the Cropping Systems Research and Extension Training Project designed and implemented by the GOS and USAID to undertake agricultural research and to provide extension personnel with current appropriate agricultural information.

The emphasis of these and other agricultural development projects has been on increasing the overall production of agricultural goods and creating opportunities for alternative income sources. It is envisioned that providing agricultural research, training and assistance shall enable a large number of small-scale homestead farmers on Swazi Nation Land (SNL) to switch from

subsistence to commercial farming. If successful, farmers would be able to obtain a cash income outside of the wage-employment market, while increasing national agricultural and homestead food production. Further, USAID and other international donor agencies have suggested that these types of projects offer the greatest potential for benefiting the greatest number of Swazis (USAID, CDSS, Update; FY 1985).

While agricultural development programs and policies have stressed the necessity of utilizing effectively the human and natural resources of Swaziland to increase economic growth, women farmers have received little or no assistance in this endeavor. Although women receive mention in the design phase of many agricultural projects, their participation in project implementation is frequently minimal. For example, Carloni's social analysis of the Credit and Marketing Project for Smallholders concludes that the design of this particular project has failed to take women's role into account, which is likely to

"restrict access to project inputs such as loans and to overestimate labor availability and the incentive to increase the marketable surplus. This may limit the flow of benefits of homesteads headed by women or where the male head is employed off the farm" (1982:23).

The failure to include or integrate women into agricultural development strategies is quite common, but nonetheless surprising, given that Swazi women are primarily responsible for homestead agricultural production. This study investigates some of the existing constraints that inhibit women from participating effectively in agricultural development projects, and makes recommendations to the GOS and the USAID for measures that will increase the participation and integration of women into national development.

### RESEARCH OBJECTIVES

The purpose of this pilot study is two-fold. Its objective is to investigate and identify the needs, constraints, and assets of women farmers producing on Swazi Nation Land (SNL). Specifically, the study is designed to identify the existing constraints and potential for the integration of Swazi women farmers into national agricultural development programs and projects.

Second, this study provides policy and project recommendations to increase the participation of women in agricultural development. In order to achieve this second objective, the study was conducted in conjunction with the Government of Swaziland's Ministry of Agriculture and Cooperatives (MOAC) and USAID's Cropping Systems Research and Extension Training Project (CSRET).

## BACKGROUND TO THE STUDY

### Women's Roles in Agriculture

Although this study provides only an abbreviated investigation of Swazi women agriculturalists, it is increasingly important that information on women farmers be obtained and utilized to promote development assistance to these farmers. While agricultural development programs and policies have stressed the necessity of utilizing effectively the human and natural resources of Swaziland to increase economic growth, women farmers have received little attention or assistance in this endeavor.

This is indeed rather surprising, given the enormous contribution that women provide in all homestead-based activities, particularly agriculture. A recent survey conducted in the Northern Rural Development Area of Swaziland by Andrehn, et al., suggests that women (wives) had the main responsibilities for all homesteading tasks with the exception of herding cattle, thatching roofs and transporting produce to market (1977:11). When women's agricultural labor was compared to men's contribution to agriculture in this survey, it was found that "the unit of participation in agriculture for females was on the average 0.76 units, from plowing (0.59), sowing (0.85) and harvesting (0.83). The unit of participation for males in the same agricultural tasks was 0.24" (1977:11-12).

Barnes (1981) suggests that women perform approximately seventy percent of all agricultural tasks while adult males contribute only thirty percent of homestead agricultural labor. Similarly, Low (1977) found that women provided the major portion of labor in maize cultivation, followed by children and then men as measured by hours worked. de Vletter's study, "Labour Migration and Rural Development in Swaziland", further documents the contribution of women's labor on the homestead. He concludes that women have the primary responsibility for "planting, weeding, harvesting, collecting firewood, fetching water, preparing food, grinding mealies (maize), and shopping" (1981:20). His research, which documents the contribution of women to subsistence farming in Swaziland, is supported by a growing body of literature on women in sub-Saharan Africa. As Boserup has noted in her book Women in Economic Development, "Africa is the region of female farming par excellence". In many African ethnic groups, nearly all the tasks connected with food production continue to be left to women (1970:16). Other detailed studies on African women in agricultural production include Cleave (1974), Clark (1975), Haswell (1963), Staudt (1982), and the United Nations Economic Commission for Africa (1974), to name only a few. Within each of these quantitative studies, we find that women's involvement in the agricultural production system is very high, often exceeding the participation of men.

Although it has been recognized generally that women are major contributors to the agricultural economy, "changes in technology appear to be associated with the decreasing participation by women in agriculture and their productivity is alleged to decline in relation to that of men" (Staudt, 1978:439). Women's

decreasing productivity in modern agriculture in Africa (mentioned by Staudt, Boserup, and others) has been explained by Tinker as the result of western effort to professionalize agriculture. She states,

"The Euro-American tendency to attribute the concern with agricultural production (with food before it leaves the harvest field) to men and to attribute the concern with food after it leaves the harvest field to women led to the dual assumption that scientific agriculture was a male field and scientific food knowledge (food preservation, nutrition, child rearing and home management) was a female field" (1976:10).

Although this perception was an essentially foreign concept in Africa, introduced by westerners, governmental policies in many African nations continue to be based on an unequalized distribution of technology and assistance between the sexes. Staudt's research on farmers in Kenya has documented the distribution of governmental resources within the nation and concludes that: "Rather than channeling resources to those with experience, policies appear to systematically benefit men at the expense of women, resulting in lower productivity by women" (1978:453).

#### Agricultural Research and Extension

Agricultural research and extension training in sub-Saharan Africa have almost always been directed exclusively at men, regardless of the degree of participation of women in agriculture. In fact, Lele claims that "the goal of extension services has frequently been not the increase in farm level productivity of women but rather finding ways to reduce their participation in agriculture through promotion of more homebound activities" (1975:77). The emphasis on the domestic role of women in Africa generally has led to the sexually segregated delivery of extension services. A 1976 FAO study on women in rural development suggests that extension programs for women have tended to stress the domestic sciences such as home economics, nutrition, and arts and crafts, while extension programs directed at men overwhelmingly concerned agricultural training (ECA, FAO, 1976). Similarly, Bond's study of women farmers in Botswana concludes that men receive more than twice as much agricultural training as women (1974).

Despite the importance of Swazi women farmers and their predominance in all homestead agricultural activities, these farmers rarely have been the recipients of substantial development assistance. Although agricultural development programs have not been designed to exclude or pre-empt women farmers from participating in modern agriculture, their social and economic status often precludes their successful participation in most conventional economic development strategies.

Within Swaziland, agricultural extension programs have been primarily directed at men. It has been suggested by several authors that women receive less agricultural information and assistance from agricultural extension personnel, whose responsibility it is to promote the adoption of more productive "modern"

farming techniques in Swaziland. At the inception of the Cropping Systems Research and Extension Training Project, it was recognized that women have substantially less access to agricultural extension services. In fact, the project design paper states that: "Female farmers are visited less by extension agents than male farmers and those visited have fewer total contacts with agents than is the case of males" (1981:D-8).

The study conducted on the status of women in the Northern Rural Development Area (NRDA) has shown that most women farmers were unaware of the services that agricultural extension workers should be able to provide. Further, although two-thirds of the women interviewed in Andrehn's study expressed a desire to learn more about agriculture, these farmers did not know anyone who could advise them (Andrehn, et al.; 1977).

Several authors have provided an explanation to account for the gender bias in agricultural extension delivery. Magagula states that women participate less in rural development programs and have less access to the services provided by the Rural Development Administration (RDA) primarily because "most extension agencies of the government and field staff responsible for the delivery of services are still both male-dominated and male-oriented in approach" (1978:308). Barnes (1979) claims that women are visited less by agricultural extension agents because it is inappropriate in Swazi culture for male strangers to visit women in the homestead when men are not present. In effect this social constraint on gender interaction has severely limited women's access to agricultural extension personnel for two reasons. First, approximately eighty-five percent of these extension employees are male. Second, approximately sixty-three percent of adult men are absent from the home, having migrated to wage employment markets. It is clear that under these circumstances women are the most effective candidates to serve as extension agents for women farmers.

#### Cash and Credit

Women's participation in agricultural development and commercial farming endeavors may also be restricted by their limited access to economic resources, particularly cash and credit. Blumberg suggests that "Recent agricultural development has been negative for women: the results of capital intensive, technologically-oriented strategies tend to increase women's work while decreasing their control over resources" (1981:42). She claims, further, that women's loss of control over productive economic resources has occurred because women have been overlooked in development strategies while men in developing countries have become integrated into commercial farming and a cash economy. Thus, men obtain access to modern technology and the cash needed to implement improved strategies, while women remain in unproductive, traditional subsistence farming.

Bond's (1974) study of women agriculturalists in nearby southeastern Botswana, has shown that women in this region often lack cash for seed, hoeing equipment, and labor, thus limiting their potential in farming. Similarly, Cloud maintains that "women's lack of access to cash assets which results from their role as unpaid family laborers and subsistence producers, when combined with

constraints on their access to paid labor markets, limits their ability to invest in productivity-enhancing agricultural inputs" (1983:27). Moreover, Boserup claims that male involvement in cash cropping has widened the gap in income and agricultural productivity between the sexes. She states: "Men can use part of their earnings from cash crops to invest in the improvement of their production, while women who produce food crops for family use have no cash income for improving their farming techniques" (1970:56).

Women's limited access to a variety of economic resources has also contributed to the perpetuation of male-oriented agricultural development strategies. For example, women farmers whose husbands migrate for employment purposes - a situation which is extremely prevalent in sub-Saharan Africa - are more likely to be low-income and thus, inappropriate candidates for extension programs offering costly "progressive farmer" strategies (USAID, WID: 1981).

Within Swaziland, women confront economic, social and institutionalized restrictions that limit their access to economic resources. Barnes concludes that "women lag behind men in application for the procurement of loans from banks and other credit institutions" (1979:44). A survey of northern RDA women revealed similar trends. Almost all respondents interviewed in this study (ninety-six percent) claimed that it was impossible for them to borrow money from a bank. Married women stated that they would not be able to take out a loan on their own, because their husbands maintain control of homestead economic resources, including cash and cattle.

Women's inability to utilize credit sources may be explained by two existing societal constraints. First, cattle are the predominant sources of collateral used in Swaziland. The ownership, allocation, and disposal of cattle is exclusively a male prerogative within Swazi society, primarily because cattle are used for the payment of bridewealth. Second, although legal steps have been taken to assure gender equality in employment in Swaziland, women are essentially viewed as minors. Male consent is required for most legal and financial activities undertaken by Swazi women. For example, women may not obtain an individual checking or savings account if married, and may not sign for loans without a counter-signature obtained from a homestead male (Women in the Law Conference, Mbabane, 1983).

Swazi women's access to cash resources tends to be rather limited due to the variety of income-generating activities undertaken by women and their extensive, homestead-based responsibilities which limit their participation in the labor market. Women are primarily engaged in rather unprofitable sidelines such as handicrafts, beer-making, sewing, and the sale of small livestock. Andrehn, et al. state that: "Women's cash income can be estimated as very low and their responsibilities in agricultural work and in the home exclude their engagement in wage employment" (1979:xi). Thus, as Henn (1982) has suggested, women's lack of access to capital is a major constraint in the adoption and utilization of farm inputs. Furthermore, because most of sub-Saharan African agriculture is in the hands of women, such resource limitations will present a major constraint for higher total Africa farm production. Thus, because women have a rather limited

access to their own financial resources, they must depend on men in the homestead to pay their agricultural expenses.

### Access to Labor and Land

Modernization and development in Africa have also resulted in the increased workload of rural women, while women's control of the means of production has decreased. During colonial times, administrators capitalized on the fact that women were responsible for raising the family's food and "used women's labor in subsistence agriculture to subsidize the export economies" (UN A/33/238, 1978:21). Males were recruited to work in the modern economic sector, while women remained at home supporting the children and elders through their agricultural and domestic labor. Robert Levine describes the compatibility of African societies with colonial economic policies by stating:

Men are always more mobile and less bound to routine tasks, as well as having greater control over property, and this is even more the case under contemporary traditions. Many tasks in which men formerly participated are now relegated exclusively to their wives and children (1966:188).

Studies undertaken by both Laburthe-Tolra (1975) and Guyer (1977) comparing agri-labor inputs by the Beti women of Cameroon in the pre- and post-colonial periods suggests that the average time spent on agricultural work by women in this group has almost doubled in recent years. Guyer claims that the recent withdrawal of male support and changes in the production system (1977:49) have resulted in the increased hours of women's labor for subsistence production, as compared with the amount of time received earlier in the century.

Male involvement in cash crop cultivation has also added to the workload of farm women in several ways. Although commercial farming has typically been within the jurisdiction of males, women inevitably have provided at least part, if not all, of the labor required.

"For women, this burden was assumed in addition to their responsibilities for growing, processing, storing, and distributing the local food crops. In short, a pattern emerged whereby women's workload tended to increase while her control over the means of production tended to decrease" (Blumberg, 1981:46).

In addition to women's labor, men also can appropriate all other available homestead labor. Carloni observes that men's higher authority and social status allows them to recruit all homestead members as laborers for cash crop cultivation. Women farmers, however, can rely on only their own and their children's time that is not already being used by men for their own productivity. Cash-crop activity, therefore, creates a serious shortage of labor on the homestead, which is a major constraint on agricultural productivity. Conversely, Saunders claims that when men engage in off-farm employment, homestead productivity is "mainly limited by shortage of labor," particularly when children

are too young to work. Thus, labor shortages are detrimental to women's agricultural activity in many ways. If men are present, women must work a double load, farming both men's and their own crops. If men are absent, the shortage of labor also demands additional work by women. Moreover, when men became more involved in cash crop production, their demand for family land increased. Consequently, the land available for subsistence crops is often farther away or worn out from overproduction. Thus, as Bryson has suggested, men's "increased land demands will restrict the land available for women to meet these needs (family food supplies); at a minimum, women could be assigned fields farther and farther away from their homes, thus increasing the burden and time involved in farming" (1981:42).

Within Swaziland, women's domestic and agricultural labor appears to be increasing with men's increased participation in the modern economic sector. Although Swazi women generally have been successful in maintaining subsistence agriculture, there is increasing evidence that women simply are unable to provide sufficient labor inputs to assure adequate agricultural productivity. In fact, several authors have suggested that one of the most serious constraints faced by Swazi women farmers is a severe shortage of farm labor. As Ngubane stresses:

With many able-bodied men away and children at school, the brunt of such cultivation is borne mainly by the married women, who can hardly operate and usually in any case, cannot afford the machinery needed (as well as fertilizer, insecticides, etc.) to make the land more than minimally productive. While the traditional division of labor and domains of competence between the sexes continue to be combined with male absence, it is not easy to see how most families can do more than scratch a bare living from their land (1981:22).

Carloni's report on irrigation scheme farmers (1982) has provided further documentation on the time and labor demands faced by women farmers. She notes:

Constraints on women's time are different from men's. The same women who have plots on irrigation schemes are also responsible for growing maize and other field crops at the homestead, shelling and grinding maize, tending chickens, herding family cattle if the boys are in school, preparing meals, tending children and caring for the aged (p. 11).

Thus, increased wage-employment in Swaziland and the out-migration of men have had tremendous impact upon homestead agricultural production and the sexual division of labor. As both de Vletter (1982) and Russell (1983) have shown, women are increasingly responsible for all aspects of agricultural production; but for a variety of reasons (e.g., lack of cash and information, and increased labor demands) they are unable to realize the full potential of homestead agricultural resources. This, in part, accounts for the stagnation of the traditional agricultural sector and the corresponding decrease in national agricultural production.

## METHODOLOGY

### Variables

As many researchers have demonstrated, Swazi women have had primary responsibility for subsistence agriculture for generations. Many of these women farmers seem very capable of accepting and implementing modern agricultural techniques and participating in agricultural development programs. Variables that tend to influence the participation of farmers in agricultural development projects and programs appear to include at least the seven variables used in this study. A description of these variables and a justification of their selection follows.

1. Sex of the farmer. As stated previously, within the patriarchal Swazi society, male farmers tend to enjoy greater access to economic resources. Furthermore, agricultural programs and projects are generally dominated by male employees and are largely oriented toward male farmers.
2. Socio-economic organization of the homestead. Labor availability, economic resources and the wealth of farmers varies greatly throughout Swaziland. In addition, the type of social organization found within a given homestead (i.e., nuclear, polygamous, extended, or woman-headed) frequently determines who is available to work in the fields, and the type of labor that homestead individuals might contribute to agricultural production. Also, resource distribution is often dependent upon the socio-economic situation of the family.
3. Age and status of the farmer. As previously described, an individual's access to and control of resources is primarily determined by his/her sex, age, and relationship to the homestead head. While a senior individual within a homestead may enjoy considerable status, prestige and economic security, a junior family member may have little influence on homestead activities and production, and may have many demands on his or her time and labor. Thus, junior homestead members would be less likely to participate fully in commercial crop production or agricultural development projects than senior homestead members.
4. Geographic location of the farmer's homestead (especially distance from urban areas and major roads). Farmers who are located in closer proximity to urban centers, RDA headquarters, and major roads have greater access to extension services, agricultural development programs, agricultural inputs and transportation. While proximity to these services and resources does not ensure that farmers will utilize them, it does give farmers the opportunity to do so.
5. The degree of participation of homestead males in wage employment (particularly length of absence from the homestead). The impact of labor migration on traditional labor practices in agricultural production has been noted by many researchers. Further, labor migration has affected homestead resources allocation, decision-making and the roles and statuses of Swazi women. Thus, the degree of participation of Swazi males in labor migration will have differential impact on homestead resources and agricultural production.

6. Participation of the farmer in homestead agriculture decision-making. While day-to-day agricultural activities probably do not require that major decisions are made to continue in production, changes in agricultural practices such as commercial farming, the introduction of new crops, and the utilization of purchased agricultural inputs (as opposed to using cow manure, for example) will require that farmers make a decision to change the farming system within the homestead. Thus, the ability of each farmer to make decisions or participate in agricultural decisions will determine his or her ability to change and/or innovate farming practices.

7. Control of homestead/household resources. If farmers are to be able to innovate or change farming systems within their own homestead, they must be able to control or at least utilize important homestead resources (i.e., labor, cash, equipment, and/or livestock). This would also include control over their own labor for agricultural tasks.

### Hypotheses

Thus, the problem investigated within this exploratory study--identification of needs, constraints, and assets of women farmers that restrict or facilitate the integration of women into national agricultural development programs and projects--was broken down into a series of interrelated hypotheses that were tested by a combination of formal and informal research techniques. These hypotheses are presented below.

1. When women farmers can overcome socio-economic constraints, they are at least as productive in "modern agriculture" as male farmers. Research conducted by Staudt (1983) and Mook (1976) in Kenya has shown that when women are given access to agricultural information, assistance, and the economic resources required for participation in modern agriculture, women are extremely competent, productive farmers.

2. Male participation in the wage-employment market has had significant impact on the woman's role and participation in homestead agriculture. Specifically, it is suggested that as male absence from the homestead increases (particularly the head of the homestead), female responsibility for managing and maintaining homestead agriculture also increases. This includes decision-making, and control and allocation of homestead resources. Because homestead organization is so varied and complex on Swazi homesteads, it is expected that the type of socio-economic organization found on each homestead (i.e., nuclear, extended, polygamous or women-headed) will determine the degree to which women farmers participate in modern agriculture and agricultural development projects.

3. Because the age, status and position of each woman will determine her role within the homestead and her participation in agricultural management and decision-making, it is expected that a woman's participation in "modern" agriculture and agricultural development will vary according to her position within her own homestead.

4. Because women appear to be constrained in their participation in activities outside the homestead, particularly in their dealings with unrelated males, it is assumed that women may take advantage of development programs and projects much more effectively if they participate collectively as a group.

5. Women who tend to maintain control over homestead agricultural resources and labor will participate more effectively in agricultural development programs than women who have little control over agricultural resources.

#### Sample and Interviews

To test these hypotheses, a non-random, stratified sample of male and female respondents was selected from three geographic regions in Swaziland. The sample was stratified to reflect varying degrees of participation in agricultural development programs by including:

- 0 traditional dryland homestead agriculturalists, utilizing available RDAP extension services;
- 0 dryland homestead agriculturalists who had initiated a farmers' cooperative to more fully utilize RDAP services but who functioned independently of governmental programs. In other words, a participant-initiated agricultural development program; and
- 0 irrigation scheme farmers, the direct participants and beneficiaries of government sponsored agricultural development programs.

Respondents were selected to represent farmers from the three topographic regions found in Swaziland: the low, middle, and high veld. Because rainfall patterns, soil fertility, and terrain had important implications for agricultural production and the type of crop produced, the sample areas were selected to reflect these geographic and climatic variables. Furthermore, each region selected for this sample differed in its proximity to urban areas, agricultural markets, and transportation facilities (i.e., both roads and public transportation).

The sample consists of forty-two (42) respondents, including: nineteen dryland agriculturalists, eleven irrigation scheme farmers, and twelve members of an agricultural cooperative. Since this study was exploratory in nature, no attempt was made to randomize the selection of respondents within each area. Once permission was obtained from the local chief (induna) and the necessary RDA officials, homesteads were selected at regular intervals. Interviews were conducted with the individual at each homestead who was responsible for farming.

To understand the sexual division of labor, resource allocations, and the dynamics that affect the use of human resources on the homesteads, both male and female farmers were interviewed. Due to the high incidence of male migration and the predominance of female labor in agriculture, only twenty-eight percent of our sample respondents were male.

Interviews were conducted using a questionnaire (see Appendix) by two teams of two people each, a Swazi and an American. The Swazi research assistants translated questions and responses from Siswati to English and notes were taken during all interviews due to the complicated nature of the interview (i.e., obtaining detailed information on homestead organizations, occupations, migration, crops grown, and so forth). The interview format generally proceeded as follows. Each team entered a homestead compound, greeted homestead members, introduced themselves explaining the nature of their visit, and requested an interview. No respondent declined to be interviewed. After being seated, each team proceeded to ask a systematic set of questions of each farmer on homestead composition, crop information (what was grown, inputs, etc.), land-size, agricultural decision-making, control of agricultural resources and resource availability, access to agricultural information, marketing and problems confronted in agriculture. Because the interviews took place in close proximity to the farmers' fields it was often possible to verify responses on crop and husbandry practices.

Following the formal interview, respondents were invited to question the interviewer. Often, respondents were quite anxious to obtain assistance from the extension services and requested that the interviewers assist them by securing these services. Most interviews were completed within one hour, however, the length of time varied from thirty minutes to two hours depending upon the openness of respondents. At all interviews notes were taken on interview conditions (willingness of respondents, who was present at an interview, apparent validity of responses, and so forth), conditions of homesteads, socio-economic status, and other pertinent observations.

The questionnaire was designed following in-depth interviews with Swazi government officials, faculty and staff of the University College of Swaziland, USAID staff, Peace Corp volunteers, and social scientists conducting social and economic research in Swaziland. Questions were pre-tested, while assisting a farming system research team to conduct interviews in two areas of Swaziland. The aforementioned experts were consulted for the selection of appropriate sample areas, and to obtain permission necessary to conduct research in these areas.

### Description of Study Areas

Lubumbo/Mpolonjeni is an RDA located in the eastern area of Swaziland. Lubumbo is on the plateau, a climatic zone which usually has adequate rainfall. Compared to the neighboring low veld, farmers on the plateau have the advantage of regular surplus yields of maize which can be marketed in the maize-deficient low veld. However, compared to other regions in the country, a large percentage (twenty-seven percent) of homesteads is without land and livestock (Barnes, 1979). Lubumbo is located within an RDA and is an area into which USAID intends to expand in the future.

Mpolonjeni, located in the low veld, has a hot, arid climate with an average rainfall of twenty to thirty-five inches. Due to climatic circumstances, the low veld is a maize-deficient area. Mpolonjeni is in close proximity to large-scale sugar plantations and mills located at Bib Bend. The Mpolonjeni dryland farmers

in the sample produced maize and/or cotton. The homesteads had low resources and were generally maize deficient. Several of the farmers had recently begun to grow cotton.

Farmers on government-supported irrigation schemes were selected from two irrigation schemes in Mpolonjeni, Magwanyane, and Kalanga. Magwanyane is an irrigation scheme consisting of one hundred hectares and thirty-six farmers. Each farmer has an irrigated plot on which vegetables or cotton is produced. In addition, the farmers grow sugarcane collectively and have a daily contract to supply sugarcane to the sugar mill at Big Bend. The scheme began in 1972 following the construction of the Nyetane Dam. The farmers were provided with an agricultural field officer in 1972, giving them a distinct advantage over other farmers in terms of access to extension information. In 1976, the farmers formed a cooperative that provided them with a source of input supply, farm equipment, credit, accounting services, and marketing facilities. In 1977, the farmers applied for a sugar quota and in 1982, were producing 52.9 hectares of sugar. With the onset of sugar production, the Magwanyane farmers have experienced financial success. Many of the farmers hire labor to work in the sugarcane, while the farmers themselves provide the labor for their individual vegetable plots. McCann (1981) suggests that as the farmers increase their income, they are likely to withdraw their own labor and hire local laborers.

Magwanyane also has some technical and management problems, however. For example, the diesel-powered water pump had been inoperative for two months, due to problems with parts and maintenance. Such mechanical breakdowns are common on irrigation schemes in Swaziland due to the lack of qualified mechanics and the unavailability of spare parts. However, despite these problems, the Magwanyane scheme has proved to be prosperous. McCann (1981) concludes that the Magwanyane project has been successful in improving farmers' incomes, but has moved in the direction of creating a subsidized elite group of farmers.

The other irrigation scheme, Kalanga, began in 1974 and consists of eighteen farmers, each with one hectare of irrigated land and two hectares of dryland in the scheme. The irrigated land is planted in vegetables and green maize, while the dryland is used predominantly for cotton production. The farmers at Kalanga are not as prosperous as those at Magwanyane. They have experienced difficulty with irrigation equipment, lack of water, limited marketing opportunities, and the hippopotamus who lives in their dam and consistently breaks the fences to feed on green maize and vegetables.

The final area in the study was Ludzelundze in Central RDA which was selected due to the presence of both a women's cooperative and an on-going farming systems research project implemented by the Swazi government and USAID. This area is within walking distance of Matsapa Industrial Complex, providing accessibility to job opportunities for people within the area. Land availability is limited due to the high population density near the industrial area and the proximity of the King's fields. A woman's cooperative consisting of sixteen members was formed in January 1983 under the leadership of a dynamic woman. The cooperative was organized specifically for the purpose of gaining timely access to the RDA tractor

hire services. Their activities have subsequently been expanded to include vegetable gardening, garden fencing, latrine construction, and handicraft production. Also, they were planning to begin a poultry enterprise and a large vegetable project. However, they were meeting with some resistance from the chief, who refused to give them land near the river which they would use to expand their crop production. The cooperative appears to have been successful in less than a year of existence, perhaps because the cooperative involves local participation and leadership. Through the formation of a cooperative, the women have gained access to government assistance and are diversifying and improving their cropping and livestock production practices. At the same time, they are improving the family food supply and sanitation practices.

The sample does not purport to generalize for all of Swaziland, or all of the RDAs in which interviews were conducted. Instead, the study is meant to be an exploratory effort which provides some insight into and illustration of sex differences which obtain in other areas of Swaziland and Africa. Furthermore, the results of this study may prompt others to investigate more thoroughly the issues covered in this research.

## RESULTS OF THE STUDY

### Homestead Composition

Although this study's sample does not generalize for homestead populations and conditions within Swaziland, the composition of homesteads within the sample population reflects current trends of social organization on Swazi Nation Land. Of the homesteads in the sample, fifty-two percent consisted of nuclear families, twenty-four percent were extended families, and fourteen percent of the homesteads were polygamous. The homestead heads were men on ninety percent of the farms in the sample, with the remaining ten percent supervised by women. (These women were effectively managing homestead activities, but it is almost impossible to determine with any accuracy whether they were in fact de jure or de facto heads of homesteads). The number of individuals identified as members of the family on these farms ranged from one to eighteen people with an average of 8.9 persons per homestead.

Extended homestead population varied by type of relatives residing on the farm. Twelve percent of the homesteads had a "grandmother" in residence (four accommodated the homestead head's mother, while one family included the head's mother-in-law who managed the homestead in his absence). Almost ten percent of the respondents within the present sample reported that the sons of the homestead heads and his daughters-in-law resided with the family. Approximately seven percent of the homesteads were found to accommodate the brothers-in-law and sisters-in-law of the homestead head and 2.4 percent housed the daughter of the homestead head with her children. Four of the farms included in the sample had unrelated individuals living among them; three had hired workers in residence, while one family had the children of a nearby chief in their care. Although rather uncommon within Swazi society today, this sample also includes two cases of polygamy, in which both wives resided on the same homestead.

### Labor Division in Agriculture

Various studies have shown that adult women provide most of the agricultural labor in planting, weeding, and harvesting (Andrehn, et al., 1977; Nxumalo, 1979; de Vletter, 1981). Based on interviews with 308 women throughout Swaziland, Nxumalo's study on the division of labor in agriculture reveals that women have the primary responsibility for planting, hoeing, weeding, harvesting, grain storage, food preservation, and tending livestock, as Table 1 illustrates.

Table 1. Division of Labor in Agriculture on Swazi Nation Land  
1978/1979

	<u>Percent with Primary Responsibility</u>			
	Female	Male	Children	Other Relatives
Preparing land	34.7	54.6	9.2	1.5
Fertilization	39.7	47.2	10.6	2.5
Ploughing	24.4	61.9	12.7	1.0
Planting	52.7	35.8	7.8	3.7
Hoeing	88.5	1.9	3.8	5.8
Weeding	91.0	0.0	3.8	5.2
Harvesting	92.4	1.3	0.4	5.9
Sorting/storing	88.7	6.0	1.0	4.3
Food preservation	96.4	0	0	3.6
Tending sheep and goats	47.3	21.8	27.3	0
Cattle	46.7	20.6	32.7	0
Cattle dip	34.6	30.7	33.9	0.8

Source: Nxumalo, 1981, p.11.

Women's labor also predominates in all domestic tasks including collecting water and firewood, purchasing and preparing food, child care, cottage industries, and the brewing of beer. Low (1977) found that women provide the major portion of labor in maize cultivation, followed by children, and then men as measured by the number of hours worked. A time allocation study in the Northern Rural Development Area found that women's labor input in agriculture was three times that of men (Andrehn, et al., 1977).

Homestead males traditionally have had responsibility for the clearing of agricultural land, ploughing, herding, milking and caring for cattle, building fences, and the construction and maintenance of homestead structures. In recent years, however, adult males are frequently absent from the homestead and therefore cannot always fulfill these traditional obligations. Thus, women often are left to complete the tasks that men had performed.

In the present study, labor patterns were examined in the various agricultural activities. Ploughing, the first activity of the cropping season, is generally performed by men. In fact, male homestead heads supposedly maintain a responsibility to plough homestead fields, despite their absence. This obligation

may be fulfilled instead by a cash contribution to the homestead to be used to hire a tractor or an ox-plough. Although some men do return to the homestead at ploughing time, their ability to return at the appropriate time is often limited by the demands of their employers and their distance from home. Furthermore, some Swazi men obviously choose not to return to the homestead at ploughing time or to send cash to cover the expenses of equipment hire. A recent study revealed that "only 31 percent of 207 Swaziland-based workers returned home for ploughing. Twenty-six percent stated as a reason for not returning that they hired a tractor. The remaining (almost half) workers stayed at work without any contribution to ploughing at home" (Andrehn, et al., 1977:51). It appears that the mechanization of ploughing has decreased some of the traditional responsibility males had for this chore, and perhaps lessened the negative sanctions against men who did not fulfill their family obligations.

de Vletter (1981) found that forty percent of homesteads used tractors; and the figure was as high as eighty-six percent in the RDAs. Ploughing is performed with a hired tractor on sixty-eight percent of the homesteads in the present study (see Table 2). The incidence of tractor hire is quite high in this study because all of the respondents resided in Rural Development Areas, and the majority lived in close proximity to RDA centers where farm equipment may be hired.

The ox-drawn plough was used most frequently on homesteads in the sample on the Lubumbo Plateau, where seventy-five percent of the farmers interviewed in that area ploughed with oxen. Of these, the head, wife (or wives), and others were responsible for ploughing on fifty percent of the homesteads, while in the other half women ploughed with children and others.

In the planting of dryland crops, women performed approximately forty-five percent of the planting, women and men accomplished this task together on thirty-eight percent of the homesteads, and men planted alone on seven percent of the farms. Thus, women participated in the planting of crops on approximately eighty-three percent of the homesteads, while men participated in forty-five percent.

As previous studies have shown, women are responsible for the most time-consuming and exhausting daily tasks, such as the weeding of agricultural plots. Women and children did the majority of the weeding on homestead farms in sample areas (ninety-five percent), while men participated in this endeavor on thirty-one percent of the homesteads, according to the respondents in this study. Approximately thirty percent of the homesteads hired labor to assist with weeding. Additionally, five percent of the farmers relied on exchange labor for weeding, providing their workers with beer, salt, part of the harvest, or their own labor.

Harvesting and processing of maize is also performed primarily by women with the assistance of children. Men assisted at harvest time on nineteen percent of the homesteads and in processing the maize on twenty-one percent of the farms. In all but one case, the men involved in the harvesting and processing were the homestead heads.

Table 2. Number of Homesteads by Family Labor Participation in Dryland Agriculture by Region

N=42	Magwanyane	Kalanga Scheme	Kalanga Dry	Tikhuba	Coop	Total Percent
<u>Ploughing</u>						
Tractor hire	5	4	4	3	11	66
Tractor (own)	-	-	-	1	1	2
Head/wife/others (oxen)	-	1	1	5	-	17
Head/others (oxen)	1	-	-	4	-	5
Wife/others (oxen)	-	-	-	4	-	10
<u>Planting</u>						
Women	3	-	1	4	1	22
Women/children	-	1	1	2	6	24
Women/men	2	3	4	5	2	39
Women/men/children	-	-	-	-	2	5
Men	1	1	-	2	-	10
<u>Weeding</u>						
Women	2	3	2	9	2	44
Women/children	2	1	-	1	5	22
Women/men	2	-	2	2	2	20
Women/men/children	-	-	2	-	2	9
Men	-	1	1	1	-	5
<u>Harvesting</u>						
Women	2	3	2	9	3	46
Women/children	2	1	1	1	5	25
Women/men	2	-	3	1	1	17
Women/men/children	-	-	-	1	2	7
Men	-	1	-	1	-	5

It is likely that male participation in homestead agriculture, within the present sample areas, is somewhat higher than one might normally encounter on Swazi homesteads. This may be because almost all male respondents included in the study were functioning as full-time farmers, whether on their particular homesteads or on the irrigation schemes. Therefore, these men undoubtedly contributed more labor to homestead (or scheme) agriculture than men who do not engage in farming full-time. For example, one male respondent in Lubombo who worked in South Africa readily admitted that despite occasional assistance with ploughing, his contribution to homestead agriculture was minimal.

As previously stated, the availability of labor on homesteads has changed markedly over the past few decades due to an increase in wage employment and male migration. de Vletter's (1981) study of 1,150 homesteads found that fifty-eight percent of adult men and twenty-eight percent of adult women were absent from the homestead; they were working elsewhere, despite increasing unemployment in Swaziland. In the present study, sixty-three percent of the adult men and twelve percent of the adult women were absent from the homesteads within the sample areas. The individuals remaining on the homestead were predominantly adult women and children, with women outnumbering men by almost three to one.

Generally, absentee workers return to the homestead on a regular basis, depending, of course, on their place of employment. The present study found approximately seventy percent of the absentees returning at least monthly while de Vletter (1981) found only half of the workers returning monthly. Although the visits are relatively frequent, they are normally of a duration of only two days (the weekend), thus limiting the amount of labor that might be contributed to homestead agriculture. Those absentees who are employed in the Republic of South Africa return to their homesteads less frequently. For example, South African mine workers generally work on a contract for a period of six to nine months and return to their homes for approximately three to four months before resuming employment in the Republic (de Vletter, 1981).

Male homestead heads frequently engage in wage-employment but are more likely to reside on the homestead than other adult men. Fifty percent of the homestead heads resided on the homesteads in the present sample, with twenty-five percent engaged in wage-employment. Thus, approximately one-quarter of the homestead heads were in residence on the homestead on a full-time basis.

Low (1981) has suggested that homesteads have developed conscious, rational strategies for allocating labor to wage employment markets and homestead agriculture in order to maximize returns to the homestead. In other words, homesteads release individuals to wage-employment who possess the greatest potential for employment rewards. Therefore, women, who have the least potential for successful wage-employment because they must bear and nurture children, remain on the homestead to tend to the agriculture and raise the succeeding generation.

What Low has failed to recognize is that homesteads actually have devised strategies that minimize returns to the homestead. While homesteads may in fact send individuals with the greatest employment potential into the cash economy, these individuals are often the same ones who are most capable of assuring the vitality and success of the subsistence sector. In their absence, the resources left for family and farm maintenance are the absolute minimum necessary to ensure the continuation of traditional culture, which is important to all Swazis, whether migrant laborers or homestead residents. Homesteads customarily provide security and a link to tradition and religion. Further, a Swazi may only lay claim to family land if the land is continuously cultivated and inhabited. Thus, the women, children, elderly, and adult men of the homestead struggle to maintain their hold on the land and the subsistence economy, often with little success. Furthermore, women are most frequently the ones who must maintain this sector through their own labor.

To examine the impact of wage-employment and migration on the division of homestead agricultural labor in the present study, comparisons were made between the length of absenteeism among male homestead heads and the labor patterns in the various agricultural activities. Male homestead heads were selected as one unit of analysis because they maintain a responsibility for certain agricultural tasks and they typically exert more control over homestead labor allocations for agriculture than other adult homestead males.

When the homestead head resided on the homestead on a daily basis or returned home on the weekends, the male contribution to homestead agriculture was quite significant in the sample areas, as illustrated in Table 3.

Table 3. The Division Of Labor in Homestead Agriculture and the Absence of the Homestead Head Daily or Weekly

N=27	Ploughing	Planting	Weeding	Harvesting	Total
	- - - - - Percent - - - - -				
Women	7.4	14.8	25.9	25.9	18.5
Women/children	3.7	25.9	25.9	25.9	20.0
Women/men	18.5	29.6	22.2	22.2	23.0
Women/men/children	11.1	14.8	7.4	7.4	10.0
Men	7.4	7.4	3.7	3.7	5.5
Women/hired	--	--	11.1	11.1	5.5
Women/men/hired	3.7	7.4	7.4	7.4	5.5
Tractor	48.1	--	--	--	12.0

Alternatively, when the homestead head returned home only on a monthly or yearly basis (or never returned), the contribution of homestead males to agricultural labor decreased considerably. As expected, the decrease in male labor contribution results in a significant increase in women's labor, as Table 4 illustrates.

Table 4. The Division of Labor in Homestead Agriculture and the Absence of the Homestead Head Monthly, Yearly, or Always

N=13	Ploughing	Planting	Weeding	Harvesting	Total
	----- Percent -----				
Women	23.0	30.7	46.0	30.7	32.2
Women/children	7.6	23.0	23.0	30.7	21.0
Women/men	7.6	7.6	--	--	3.8
Men	15.3	7.6	--	--	5.7
Women/hired	--	23.0	23.0	23.0	17.2
Women/exchange	--	7.6	7.6	15.3	7.6
Tractor	46.0	--	--	--	11.5

On nuclear homesteads, the male head may be the only (or one of few) adult males available for agriculture labor. Therefore, the extended absence of a homestead head will reduce male labor contributions to the homestead. The predominance of nuclear homesteads in this sample therefore accounts for decreased male labor contributions on the homestead. However, the location (term of residence) of the homestead head also affects the participation of other males in homestead agricultural chores. For instance, when the head is frequently present on the homestead, there is a higher incidence of labor contributed by his brothers. On the other hand, when the male head is absent for extended periods, the only contribution of adult male labor (with the exception of that provided by the head) was provided by one female respondent's brother. Moreover, when the head is absent for long periods of time, the incidence of females hiring labor to assist them increases almost three-fold.

Thus, the distribution and availability of agricultural labor is strongly affected by the labor migration of homestead members, particularly the homestead head. In addition, the amount of time spent on the homestead by the male head has an impact on the availability and allocation of labor resources in both nuclear and extended family homesteads. Moreover, in this sample, the length of

absenteeism of the homestead head directly affects the amount of labor contributed by both genders. When the homestead head is frequently absent, the participation of women in homestead agriculture increases while male labor in agriculture decreases.

The distribution of agricultural labor and the participation of women in homestead cultivation is also strongly influenced and determined by the composition and organization of each homestead. Several authors have discussed the connection between homestead organization and farming practices. Low's research (1977) indicates that homesteads with an abundance of women and children in residence are more likely to meet subsistence requirements and produce a surplus crop of maize. Thus, according to Low, extended family units would have a larger, more productive labor pool.

Sibisi's (1981) study of "Keen Farmers" argues that successful commercial farming is more often found when monogamy is practiced. She states, "The need for spouses to work as a team, if they are to make a breakthrough into surplus-food farming, probably goes far to explain the high incidence of monogamy among these farmers, on the assumption that conflict of interests and outlooks is likelier in a polygamous marriage" (p.16). Russell, et al. (1983), in a survey of maize growers, conclude that homesteads with smaller populations tend to be more successful agricultural producers. The study also points out that producers of surplus maize within their sample included a greater number of males in residence than females:

A larger female labor force is not in itself a sufficient prerequisite for a successful subsistence maize crop. Associated with their higher homestead size is the more complex kinship structure of the unsuccessful households, almost half of whom have extended family structures, which were much rarer amongst the successful (p.8).

It was assumed for the present study that the availability of labor would be much greater in extended family homesteads than in the nuclear family units. It also seemed logical to presume that extended family units would have more male residents, and therefore the male contribution to homestead farming would be greater in these homesteads. In fact, however, nuclear family units within the sample areas exhibit a much greater incidence of male participation in subsistence farming. Furthermore, although women and children together provide comparable amounts of labor in both extended and nuclear homesteads, adult women alone provide approximately three times more labor on extended family homesteads as on nuclear homesteads.

Table 5. The Division of Labor on Extended Homesteads

N=10	Ploughing	Planting	Weeding	Harvesting	Total
	----- Percent -----				
Women	--	20	50	40	28
Women/children	10	30	10	20	18
Women/men	10	20	10	10	13
Women/men/children	10	20	20	10	15
Men	10	10	--	--	5
Women/hired	--	--	10	10	5
Tractor	60	--	--	--	15

Table 6. The Division of Labor on Nuclear Homesteads

N=21	Ploughing	Planting	Weeding	Harvesting	Total
	----- Percent -----				
Women	4.7	4.7	14.3	14.3	9.5
Women/children	14.3	19.0	14.3	14.3	15.5
Women/men	9.5	28.5	28.5	23.8	22.6
Women/men/children	9.5	9.5	4.7	4.7	7.0
Men	4.7	9.7	4.7	4.7	5.9
Women/hired	--	14.3	23.8	14.3	13.0
Men/hire	4.7	9.5	4.7	9.5	7.0
Women/exchange	--	4.7	4.7	4.7	3.5
Tractor	52.3	--	--	--	13.0

The abundance of agriculture labor provided by women in extended homesteads may, of course, be attributed to the fact that these large homesteads simply have a greater female population. Although this is an accommodating argument, it ignores the very complex social, economic, and political systems of organization

that exist on extended family homesteads. For example, a female respondent in Mpolonjeni, the wife of the homestead head, claimed that she provided the major portion of labor on the homestead, despite the fact that three other adult women resided with her on the homestead. The respondent stated that her three daughters-in-law provided only minimal assistance in maize cultivation and no assistance at all with the cotton crop. The respondent was particularly annoyed about this situation and said, "My daughters-in-law only work in the maize fields because they want to have food to eat. One of my daughters-in-law packs up and goes to her husband whenever there is work to be done. None of them will work in the cotton fields. They are lazy." The respondent's statement reflects in part a sort of ritual animosity that exists between mothers and their sons' wives. Nonetheless, her comments also illustrate the separation of labor obligations and economic responsibilities that frequently exist on extended family homesteads.

Within a nuclear family homestead, the household is synonymous with the homestead and economic and social distinctions between households simply do not exist. It would appear from this small sample that males assisted with agriculture more frequently on nuclear homesteads for several reasons. First, the food produced on the homestead typically sustains only one household. Consequently, there can be no discrepancies in the production and allocation in homestead food. Second, the land cultivated on a nuclear homestead is allocated to only one household; therefore few conflicts can arise on land distribution, labor contributions, and the allocation of the produce.

Polygamous marriages may assume a variety of forms and the specific manifestation of polygamy that exists within each plural marriage affects the participation of women in agriculture and their control over the agricultural produce. Traditionally, all wives of the polygynist were located on the same homestead and, according to Marwick (1940:40), these homesteads were "divided into more or less watertight divisions," with each wife and her children maintaining a separate and distinct household. de Vletter's study suggests that this traditional form of polygamy is now quite rare. Only five percent of Swazi homesteads were found to contain more than one wife (1981). According to Ferraro:

...in more recent times, however, polygyny has taken new and less attractive forms. A man with urban employment, for instance, may have a wife in town while retaining another wife to look after the rural homestead. Or a man may have two or more widely separated rural homesteads with wives and children at which he divides his time (1980:32).

Within the present study, the respondents reported that eleven percent of homestead heads were polygamous. This is, in fact, a rather low rate of polygyny. Nxumalo (1979) claims that fifteen percent of marriages are polygamous and Wallender (1978) found 19.4 percent of her sample to be polygamous. Therefore it is possible, as Ferraro suggests, that with wives residing in separate homesteads, polygyny is difficult to recognize, and that some polygamous marriages were not recognized during the interviews. Of the six incidences of plural marriage found in this study, two followed the more traditional practice of have co-wives reside

on the same homestead, while four maintained a separate residence for each wife. In addition, the rate of polygyny never exceeded two wives within the sample area.

Ferraro has suggested that in recent years polygyny is often the cause of female poverty and increased labor demands on women. He explains that:

...there is growing evidence to support the idea that when a man tires of his wife he will pick another wife, this action being sanctioned by the traditional value of polygyny. But, unlike the traditional situation, today the first wife is simply left on her own to support herself and her children (1980:53).

In the present study, male contributions to agricultural labor on polygynous homesteads depended upon the place and term of residence of the polygynist. For example, one respondent claimed that her husband divided his time between his two wives' homesteads, but usually was available to plough the respondents' fields. On the other hand, when a polygynist preferred to reside with only one of his wives, the other wife could not rely upon his assistance in agriculture. Furthermore, although a woman may not receive assistance in farming from her husband, he may take a portion of the harvest to share with his other homestead. Three of six respondents claimed to provide their co-wives with a part of their agricultural produce.

Table 7 provides an illustration of the distribution of labor on polygamous homesteads within the sample areas.

Table 7. The Division of Labor on Polygamous Homesteads

N=6	Ploughing	Planting	Weeding	Harvesting	Total
	- - - - - Percent - - - - -				
Women	--	16.6	33.0	33.0	20.8
Wives together	--	33.0	33.0	33.0	24.9
Women/children	16.6	33.0	16.6	16.6	20.8
Women/men	16.6	--	--	--	4.1
Men	33.0	16.6	--	--	12.5
Women/exchange	--	--	16.6	16.6	8.3
Tractor	33.0	--	--	--	8.3

Because the sample size is limited, it is not possible to draw substantive conclusions on polygamous households or homesteads. It does appear, however, as though women and children provided the bulk of the agricultural labor, as in other types of homesteads. According to the respondents, men contributed labor to homestead agriculture only when the male head was in residence on at least a part-time basis. When polygamous men lived with one wife, the other wife received no male assistance in agriculture, neither from her husband, nor from other men.

When co-wives resided at the same homestead, labor contributed by both wives was comparable and the produce distributed evenly. Although Swazi women generally seem to be opposed to their husband's taking another wife, (Ferraro 1980), it is recognized that the practice is sometimes beneficial in obtaining an additional source of homestead labor. Furthermore, Clignet has suggested that women in polygamous households often cooperate to survive while their husband is away in wage-employment (1970). One polygamous homestead included in the present sample contained a man, his two wives, and their children. The man was employed in the South African mines and was usually absent from the homestead. Although each wife maintained her own household, these women farmed, cooked, and ate together along with their children. In addition, they had obtained a parcel of land by the river and were jointly cultivating vegetable crops for homestead consumption.

It has already been suggested that occasionally polygamy is practiced for the sake of convenience. Not infrequently, a man who is in wage-employment will take a wife to perform domestic chores and provide him with companionship while he is in the urban areas. Polygyny may also provide an effective means of obtaining an additional source of labor. In one case, a man with a plot in Magwanyane irrigation scheme has two wives, one who works on the irrigation scheme and another who has the responsibility for maize production on the homestead. In fact, this man suggested that he had taken his second wife when he obtained the irrigation plot.

The present study included very few cases of women-headed homesteads (only four), which is considerably lower than the rate reported by de Vletter (1981). He suggests that approximately twenty-five percent of homesteads are female-headed. Many problems arise when attempting to identify women-headed homesteads. Certainly, the high rate of male absenteeism that exists in Swaziland suggests that many women are in effect managing and supervising activities on numerous homesteads. Nevertheless, a man may be absent for many years and still maintain his nominal position as homestead head.

Barnes (1979) suggests that approximately twenty-two percent of Swazi homesteads are headed by women, and these are the most disadvantaged in the country. One respondent who was interviewed in this study typifies the predicament of some women who head homesteads. The respondent from Lubombo, who was recently widowed, stated that she had no money for agricultural inputs, no agricultural tools or equipment, and a shortage of labor. Other female heads of homestead claimed they were able to enlist the assistance of their children to pay

for equipment hire and agricultural inputs. Two respondents worked on the farm with their children while the other two respondents received assistance in ploughing from male relations who were maternal relatives. Three of these women hired labor to assist them with weeding and harvesting, presumably because they suffered from labor shortages. Table 8 illustrates the distribution of labor on women-headed homesteads.

Table 8. The Division of Labor on Women-Headed Homesteads

N=4	Ploughing	Planting	Weeding	Harvesting	Total
	----- Percent -----				
Women	--	--	25	--	6.25
Women/children	--	50	50	50	37.5
Women/men	50	25	--	--	18.7
Women/hired	--	25	25	50	25.0
Tractor	50	--	--	--	12.5

One interesting result of the interviews conducted on women-headed homesteads was that only one woman claimed to undertake agricultural chores alone. In this case the respondent was weeding without assistance. Perhaps women heads of homesteads are better able to control homestead resources, even though they suffer certain social and financial disadvantages. The sample is too small to test this hypothesis.

The Division of Labor in Irrigated Agriculture

On the irrigation schemes, plots are assigned to individuals rather than households or homesteads. Consequently, the division of labor may differ from typical homestead patterns of labor division. As Carloni (1982) points out, "when the formal plot holder is a woman, she pays for tractor hire and inputs out of her own savings, provides all of the work, and attends scheme meetings" (p.7). Men, however, frequently utilize the homestead's labor resources. "When the plot 'owner' is a man, the situation is more complicated. He pays for tractor hire and inputs, but someone else does most of the work" (Carloni, 1982:7).

Women plot holders, within the present study, provided approximately one-half of the labor on all plots in planting, weeding, and harvesting. All irrigation scheme members interviewed in both Magwanyane and Kalanga hired tractors to plough and create irrigation furrows. Men participated in approximately twenty-seven

percent of all agricultural tasks with the exception of ploughing. It is important to note, however, that male participation in irrigation scheme labor is restricted to their own plots, while women often provide labor for their husband's or fathers-in-law's plot, even if they are cultivating their own land on the irrigation scheme. Furthermore, the contribution of children's labor to irrigation scheme plots is quite limited, particularly when compared to their participation on homestead agricultural land. The distribution of labor for respondents on irrigation schemes is illustrated by Table 9.

Table 9. The Division of Labor on Two Irrigation Schemes

N=11	Ploughing	Planting	Weeding	Harvesting	Total
----- Percent -----					
Women	--	45	45	45	34
Women/children	--	9	9	9	7
Women/men	--	27	27	27	20
Women/men/children	--	--	--	--	--
Men	--	9	9	9	7
Women/hired	--	9	9	9	7
Tractor	100	--	--	--	25

When the distribution of labor on scheme holdings is viewed collectively, the figures are quite misleading. As stated previously, male plot holders almost always cultivate their irrigated land with the assistance of women. In fact, the only male respondent who did not receive assistance from women stated that he was forced to farm alone because his wife was ill. As Table 10 shows, women receive no assistance from their children. Apparently, men do not require the assistance of their children, presumably because their wives' assistance is insufficient.

Table 10. The Division of Labor by Sex of Plot Holder  
(All Agricultural Tasks Except Ploughing)

N=11	Female Plot Holder	Male Plot Holder
	----- Percent -----	
Women	66.6	20
Women/children	16.6	--
Women/men	--	60
Men	--	20
Women/children/hired	16.6	--

Women respondents from the irrigation schemes often reported that they had difficulties managing both the irrigated crop and dryland production. Whereas a male farmer may choose to leave wage-employment to embark upon a career in commercial farming, a woman almost never has the luxury of choice. Women scheme members all stated that they retained the primary responsibility for homestead agricultural and domestic chores in addition to their labor obligation on the irrigation scheme. Carloni (1982) points out:

Constraints on women's time are different from men's. The same women who have plots on irrigation schemes are also responsible for growing maize and other field crops at the homestead, shelling and grinding maize, tending chickens, herding cattle if the boys are in school, and so forth (p.8).

A similar situation exists in irrigated agriculture in the women's cooperative in the Central Rural Development Area, as Table 11 illustrates.

Table 11. The Division of Labor on Horticultural Plots in the Central Rural Development Area

N=10	Ploughing	Planting	Weeding	Harvesting	Total
	----- Percent -----				
Women	54	36	45	36	43
Women/children	27	64	54	64	52
Tractor	18	--	--	--	5

Women and children perform all agricultural work on the horticultural plots, including the more traditionally male jobs of ploughing and land preparation. It might be assumed, therefore, that men have no obligation to provide any assistance in agricultural endeavors outside of homestead subsistence crops. Furthermore, it might be inferred that homestead males do not involve themselves in horticultural cultivation in the Central Rural Development Area because this endeavor is essentially a women's undertaking. One respondent, the daughter-in-law of the homestead head, stated that she worked with her in-laws cultivating the homestead maize crops, but labored on the horticultural plot alone. She also stated that she provided her father-in-law's household with a portion of the vegetable crop, which is appropriate, expected behavior.

Therefore, it would appear that when women engage in agriculture outside of the homestead maize crop, they can expect no assistance from homestead males, even if some of the produce is consumed at the homestead. Alternatively, homestead males can always expect the assistance of their wives (or daughters-in-law) in any agricultural endeavor that they decide to pursue. Further, when women decide to expand their agricultural undertakings to obtain additional cash and food for the homestead, they can only do so in addition to performing their existing domestic and agricultural duties.

It is interesting to note that despite the tremendous labor constraints faced by women on the irrigation schemes, they were able to compete with male scheme members in both quantity and quality of their produce, according to respondents and agricultural experts working with the schemes. It is not possible to quantify the success of the horticultural cultivation undertaken by the Central Rural Development Area women's cooperative because many of the participants had just planted their first crop. Nonetheless, most of these women entered into the endeavor with the objective of making money. It is presumed that they will not allow a labor shortage to forestall them.

#### Summary

As previous studies have demonstrated, women and children provide most of the labor on subsistence farms on Swazi Nation Land. Men assist with the more strenuous chores of ploughing and land clearing, although in recent years this obligation has frequently been met by sending cash for tractor hire, rather than by men's direct labor contribution. Approximately one-quarter of the absentee homestead members reported by the respondents sent cash for tractor hire. When an ox-plough was used, men and women both contributed labor in this endeavor. Women participated in ox-ploughing on eighty-five percent of the homesteads using this land preparation method, while men working with women and others performed approximately sixty-seven percent of the human labor required in ox-ploughing.

The participation of women in homestead agriculture and the availability of labor is dependent on many differing variables. The distribution of labor is strongly affected by the absence of homestead members, particularly the homestead head. The male head of the homestead not only provided labor himself on many of

the homesteads, but he also seemed to control the allocation of homestead labor resources. Thus, when he was absent, all male contributions to homestead agriculture decreased while contributions to farming labor increased.

Similar behavior has been reported by Gordon (1981) in her study of women and the effects of labor migration in Lesotho. She claims that although one might expect a woman to receive assistance from their patrilineal kin in the absence of her husband, "It appears not to be extensive or effective enough to significantly influence the way in which the wives function or the burden they must bear" (p.71).

The division of agricultural labor and the participation of women in homestead cultivation is also strongly influenced by the composition and organization of homesteads. In the present study, men participated in farming more frequently in nuclear families than on extended family homesteads, despite the fact that extended families typically involve a larger male population. Although there is a complementary increase in the female population in extended family units, agricultural labor and produce may not be equally distributed between women on extended family homesteads. The complex kinship structure that exists within extended families in Swaziland frequently results in an unequal distribution of homestead resources, leaving some female members more responsible for agricultural tasks than others.

Within nuclear families, the distribution and control of resources may not be equally shared by all members, but the homestead structure is not complicated by sharp divisions between the rights and duties of households within the homestead. The household and the homestead are synonymous in nuclear family homesteads, and it is likely that this fact tends to make men view their roles in homesteads as more important and necessary.

Within polygamous homesteads, male participation in agriculture is defined by the polygynist's place and term of residence. When polygamous males alternate their place of residence between the homesteads of their wives, they are more likely to participate in agriculture on both homesteads. In addition, his presence on each homestead tends to increase the participation of other men in farming.

Alternatively, when a polygynist resides with only one of his wives, the homestead where he does not reside is unlikely to receive any assistance from him in terms of agricultural labor. Furthermore, he may take a portion of the agricultural produce from the homestead to share with his wife and children at his homestead of residence. When co-wives resided at the same homestead within the present sample areas, they performed all agricultural tasks themselves with their children and the occasional assistance of their husbands.

On women-headed homesteads, women seemed to be able to enlist the assistance of their children and relatives for agricultural labor and cash for agricultural inputs. In fact, they seemed better able to control homestead resources than when the head of the homestead is male, but absent for extended periods of time.

In irrigated agriculture, the participation of both genders in agricultural labor was determined by the sex of the plot "owner". When men hold land on irrigation schemes they inevitably receive the assistance of women in all agricultural tasks with the exception of ploughing. When women are the "owners" of scheme land, or initiate irrigated farming on homestead land, they accomplish all agricultural chores with the assistance of children. Men, however, never provide any labor on irrigated agricultural land "belonging" to women.

Thus, in the present study, the distribution of agricultural labor and the sexual division of labor was determined by a variety of conditions including homestead absenteeism, homestead composition and organization, and the type of agriculture practiced. Therefore, although it may be recognized that women provide the majority of agricultural labor with their children, the actual labor responsibilities and obligations differ considerably according to specific situations. It would seem prudent for development planners to be aware of the determinants of labor distribution on Swazi homesteads and to design programs accordingly.

It is important to recognize the extraordinary amount of labor provided by women in all homestead chores. On the surface it might appear as though men could easily fulfill their labor obligations in subsistence agriculture if they return home on a monthly or bi-yearly basis. After all, land clearing and ploughing may be quite arduous tasks but they are not time-consuming. Typically, these chores require only one or two days and need only be accomplished once or twice a year. (Some farmers plough during the winter to facilitate easier land preparation during the summer months.) Further, women have always provided the bulk of labor in farming and their continued obligation in this economic endeavor does not, therefore, appear inappropriate or particularly burdensome at first glance. The difficulty women face in meeting homestead agricultural labor requirements stems mainly from the fact that women simply cannot provide the necessary commitment to subsistence farming because they are too busy with homestead chores, including those which traditionally are performed by men. Thus, if a man only returns to the homestead on a monthly or even weekly basis, he cannot possibly complete all the work which is traditionally expected of him on the homestead. Therefore, given the present socio-economic strategies used to compensate for the migration of family members found on Swazi Nation Land, it seems likely that women will continue to provide the bulk of homestead labor and economic production on the farms shall decrease. As Gregory and Piche have noted, "Even the short-term absence of members of the household, which usually constitutes the basic unit of production, causes a disproportionate drop in production by the household" (1982:28-29).

## Decision-Making in Agriculture

It is difficult to obtain precise and reliable data on homestead agricultural decision-making in Swaziland. In one sense, this difficulty arises because inquiries concerning decision-making processes necessarily relate to an investigation of the homestead power structure, which may not actually be as it is described. Decision-makers are assumed to be those who have achieved influence, status, and prestige within the homestead structure. Not infrequently, however, the reality of the decision-making process is quite different from idealized systems of social rules and behavior. Respondents may claim that the household head has decision-making responsibility even though he or she rarely exercises it. Further complicating the issue is the fact that many farming activities are so routine that they really do not involve any decision-making at all (Bond, 1974). Ploughing and planting, for example, are often routine seasonal activities. Typically they are undertaken without much discussion or consideration at all.

Another factor that clouds an understanding of the homestead decision-making process is the likelihood that there is often more than one individual or procedure involved in this process. The outcome of such a process typically is colored by the personalities of those involved. Therefore, the interactions involved in decision-making rarely follow a specific procedure.

There are many levels of decisions required in agriculture. Primary decisions or policy discussions may always require the judgment of the household (or homestead) head and/or the collective agreement of household/homestead members. Minor day-to-day decisions may be made by the individual carrying out most of the farm labor without consulting other individuals on the farm, particularly in routine agriculture activities.

Despite the complex, nearly elusive nature of the decision-making process in agriculture, it is possible to obtain some knowledge of gender differentiation in decision-making policies and practices. Specifically, one can gain some insight on what farmers perceive as the male and female roles within this process. It has been suggested that a major impediment to women's participation in modern agriculture and commercial farming is the fact that women farmers are not allowed to make major agricultural decisions. As Andrehn states:

Although the women are those who show interest in agriculture, not only for consumption but also for sale, they are not able to make any independent decisions about major changes in crop production or animal husbandry, financial investments, or other important aspects to improve their production and subsequent output (1977: xxv).

Ngubane claims that the homestead head possesses the ultimate authority over decision-making, "And no major decision on use of land or the disposal of cattle can be made without consulting him and usually also without his approval" (1983:11). Women's impotence within this sphere of domestic influence has been attributed primarily to traditional beliefs and practices, according to several other authors. Nxumalo's (1979) survey indicated that decisions about agriculture, livestock, and other farm requirements are reserved for the husband, or head of the homestead, who may be absent when specific difficulties arises. Sibisi (1979) suggests that a male homestead head generally "coordinates and supervises the agricultural activities of the homestead and can make decisions (if not final decisions) about what is to done" (p.3).

This view is not shared by all researchers and observers of Swazi society, however. In fact, several authors have suggested that Swazi women have, and perhaps always have had, a considerable influence over decisions which affect the homestead and household. A recent survey of women in rural development in Africa and Latin America suggests that women maintain a significant influence in all areas of agricultural production and decision-making (Michelwait, et al., 1976). Nasrin Tabibian, in her study, "Swazi Women's Income Generating Activities," found that control over household/homestead decision-making may well be changing. She states, "In fact, today it seems that in most cases these women have more, or at least as much influence on the family decisions as their husbands" (1983:15).

Generally, women may be gaining more authority over decision-making as a result of economic conditions. Economic circumstances have necessitated the outmigration of males to employment centers in response to an increased dependence on a cash economy. This situation in Swaziland and in other parts of Africa has led to an increasing number of real or de facto women-headed households where women bear the primary responsibility for all agricultural decisions (AID/WID, 1974:150). Similarly, de Vletter (1981) concludes that women's traditional submissive role in agriculture may be changing. He found that more than one-quarter of the homesteads were "supervised" by a woman in the absence of her husband. Furthermore, he postulates that women may soon dominate all aspects of homestead agriculture.

Sibisi provides some insight on the discrepancies that exist between reports on homestead decision-making practices. She claims that, "Traditional conventions preclude even admitting that a woman can make major decisions in the absence of their men, where in practice -- and not infrequently -- she can. For her to do so would be to insult her husband or father-in-law" (Traditional Securities, updated). It is unlikely that the situation described by Sibisi is applicable to all Swazi homesteads. Nonetheless, if this situation exists on some conservative, traditional homesteads, this would account for the differing reports on homestead decision-making.

Authority over homestead decisions undoubtedly varies according to the status, power and personalities of homestead members. Although a homestead head may exert primary control over homestead activities, his mother also possesses

considerable status and may, therefore, be consulted and deferred to when important decisions are to be made. The homestead head's mother (gogo) has authority over all of his wives and each wife has differentiated amounts of power and authority within the homestead. Consequently, Swazi women may have very different types of influence on decision-making, depending upon their particular position within the homestead.

Furthermore, the processes and practices of agricultural decision-making are naturally influenced by the composition of the households and homesteads. In more traditional, extended family homesteads, it is probably more likely that homestead males confer and make decision among themselves, with limited participation of female homestead members. Alternatively a homestead head may, in some instances, maintain authority over all homestead decisions. Decision-making on nuclear family homesteads, on the other hand, may be the joint responsibility of a husband and wife.

Influence and participation in homestead agricultural decision-making may be determined by the circumstances and the decisions to be made, as Russell (1983) suggests. She claims that decisions on issues requiring the cooperative labor of all homestead members are usually made collectively. Often the head of the homestead confers with his wife or wives, or defers to the recommendations of his mother. Decisions to purchase and apply inputs such as fertilizer and seed are frequently made exclusively by homestead members who have both the cash and the access to purchase these items. Russell adds, however, that although individuals may control the purchase of these inputs, they must rely upon the labor and cooperation of homestead based members. Thus, in many instances, control over homestead agricultural decision-making is dispersed.

Influence and control in decision-making is also related to authority in other social and economic areas. This is particularly true when decisions are dependent upon the expenditure of cash, labor, and other resources. One might assume, for example, that the individual who maintains control over financial resources required for agricultural inputs would have a significant influence over some, if not all, agricultural decisions, as Russell suggests. Furthermore, the individual who has the authority to allocate and supervise labor resources on the homestead should also exert some influence when farm decisions are made.

Despite the complexity of issues involving decision-making on the farm, such data is crucial to the planning and implementation of development projects. The successful integration of women into agricultural development and the adoption of modern agricultural methods will require both a change in farming behavior and a substantial commitment to time and labor by Swazi farmers. Further, each homestead participating in such an endeavor must make a series of decisions on financial allocations, labor distribution, marketing strategies, and cash investment.

For the purpose of this exploratory research study, two areas of homestead decision-making and control were investigated: decisions in agricultural production, and decisions concerning the control of resources for agricultural expenses. First, respondents were asked who made farming decisions within their homestead. Second, respondents were asked which homestead member paid for agricultural inputs such as fertilizer and tractor hire. In both instances distinctions were made between subsistence and cash crops (e.g., maize as opposed to cotton); and between dryland and irrigated agriculture. These distinctions must be drawn because agriculture decisions and expenditures are not necessarily made by the same individuals. For example, the homestead head may pay for all inputs required for maize while his wife pays for inputs in horticultural production. Similarly, a man may engage in tobacco production with his brother as well as producing maize with his wife. Finally, because of the high incidence of absentee men, respondents were asked who assumed responsibility for agricultural decisions when the homestead head was absent.

Thirteen of forty-one respondents stated that the male head of the household or homestead made decisions, and thirteen claimed that agricultural decisions were made jointly by male and female homestead members, primarily by the homestead head and his wife or wives. Respondents tended to favor those of their own gender when discussing control over decision-making. Two-thirds of the twelve male respondents claimed that they had responsibility for agricultural decisions and/or conferred with their wives or mothers. Similarly, female respondents suggested that they made agricultural decisions or had joint decision-making responsibility with their husbands. Grandmothers also reported control over decisions. Table 12 provides the distributions of responses by gender of the respondent. Only one female respondent claimed that her husband maintained control over agriculture decisions. Responses from women farmers were almost equally distributed between female control over decision-making and joint male and female control over decision-making. Male respondents tended to claim individual control over decision-making much more frequently than female respondents. Only sixteen percent of the male respondents compared to forty-eight percent of the women stated that decisions were made jointly. One respondent claimed his wives made agricultural decisions; however, he was rarely in residence at the homestead as he worked at the South African mines.

Table 12. Decision-Making in Agriculture by Sex of the Respondents

	Male (N=12)	Female (N=29)
	- - - - - Percent - - - - -	
Male homestead/household head	75.0	3.5
Female homestead/household head	8.3	48.2
Both male and female	16.7	48.3

Male influence over decision-making is directly related to time spent residing at the homestead. Exclusive male control over decisions in this small sample occurs only when men are residing at the homestead on a daily basis. Table 13 illustrates the distribution of decision-making as it relates to homestead residence. Table 13 also illustrates that female control of decision-making increases when the length of male residence at the homestead decreases. Females obtain almost exclusive control over decisions made in agriculture when males remain away from the homestead for more than a month at a time. These results, although not conclusive, tend to agree with larger, more extensive works on the effects of male migration (see, for example, de Vletter, 1982).

When asked who made agricultural decisions in the absence of the homestead head, twenty-seven of forty-one respondents (65.8 percent) claimed that women (predominantly wives) most often made these homestead decisions. Twenty-five respondents claimed that wives made decisions, while two stated that gogo had this responsibility. Eleven respondents (26.8 percent of the sample) claimed that the homestead head is never absent. One woman whose husband was deceased said that during her absence her son took over responsibilities of head of homestead and made all agricultural decisions, in addition to others. Two respondents were not specific about decision-making authority and suggested that either wives or children made decisions when the homestead head was away.

Table 13. Decision-Making in Agriculture and Frequency of Male(s) Residing at Homesteads

Decision Maker(s)	Daily (N=19)	Weekly (N=9)	Monthly (N=6)	Yearly (N=3)	Deceased or Never (N=4)
- - - - - Percent - - - - -					
Male homestead/ household head	47.3	--	--	--	--
Female/wife of head of homestead/ household	10.5	11.1	100	100	100
Both decide	42.2	99.9	--	--	--

Control over decision-making also seems to be influenced by control over cash resources for agricultural inputs as illustrated in Table 14. When men pay for agricultural inputs, women apparently still maintain a considerable amount of decision-making control. Twenty-five percent of respondents who claimed that

Table 14. Agricultural Decision-Making and Individual Paying for Agricultural Inputs

	Male Pays for Inputs (N=28)	Female Pays for Inputs (N=9)	Both Pay for Inputs (N=2)	Other Pays for Inputs (N=2)
	- - - - - Percent - - - - -			
Male homestead/ household head	32.2	--	--	50
Female/wife or home- stead/household head	24.9	66.7	--	50
Both decide	42.9	33.3	100	--

males paid for all agricultural inputs stated that females retained primary control over decision-making, while forty-three percent of the respondents claimed that males and females made decisions jointly when males paid for inputs. Thirty-two percent of the respondents who claimed that men paid for agricultural inputs noted that men have exclusive control over decisions made.

According to the respondents, when women control the resources for agricultural inputs, they retain significant control over decision-making. None of the respondents who stated that women paid for agricultural inputs claimed that men made decisions. All respondents in this category were women. Six of the eight respondents who stated that women paid for agricultural inputs claimed that they also made all agricultural decisions. Three respondents claimed that women paid for inputs but agricultural decisions were made by both men and women jointly.

Control of Cash Resources for Agricultural Inputs

Although both men and women often share responsibilities for homestead decision-making, men are predominantly responsible for purchasing agricultural inputs and other homestead necessities. Barnes (1979) stated that: "Rural women are disadvantaged in their access to agricultural inputs and services and yet they tend to be more educated than their resident male community" (p.46). More men purchase agricultural inputs and hire agricultural equipment than women; women simply have less access to cash.

In the sample areas selected for this study, agricultural inputs and equipment hire were financed by male homestead/household heads on fifty-five percent of the homesteads. Male financing of agricultural expenditures increases to seventy percent when cash contributions to agriculture include all male homestead members (sons and brothers particularly). Table 15 provides an illustration of the distribution of contributions by gender of the respondent.

Table 15. Individual Paying for Agricultural Inputs by Sex of Respondent

	Male (N=12)	Female (N=28)	Total (N=40)
	- - - - - Percent - - - - -		
Male head of homestead/ household	83.3	52.8	55
Wife or female head of homestead/household	--	28.5	20
Both	--	7.1	5
Sons/brothers	8.3	14.3	12.5
Head and children exchange	8.4	7.2	2.5

Women are responsible for financing agricultural inputs on approximately twenty percent of the farms. Women's limited contribution to agricultural expenses is not surprising, as women who receive a cash income from marketing handicrafts, beer, livestock, and agricultural produce also pay for school fees, food, and other homestead necessities. Furthermore, men traditionally have control over their wives' earnings from agriculture as evidenced by one respondent who claimed: "I bring the money I earn from farming to my husband. He decides how to spend it." It should be pointed out, however, that showing one's earnings to one's husband is most likely a sign of respect and does not necessarily connote male control. Carloni claims, "She shows her earnings to her husband but the decision how to spend the money is hers" (1982:7).

Women's restricted access to cash may in fact have a detrimental impact on agricultural production in Swaziland. As a recent study in the Northern Rural Development Area states:

If the decision on expenditures were left to women, many would use extra cash income for investing in agriculture. Agriculture is the only expenditure mentioned which can be considered an investment able to generate further cash through sale of produce. However, the decisions on investment in agriculture depend on the head of household who, if a man, apparently will tend to give low priority to such investments (Andrehn, et al., 1977:xxv).

Decision-Making and Control of Resources by Region

Responses obtained from interviews in Magwanyana provided the same trend in decision-making as the collective sample. Two respondents stated that decisions were made by homestead heads, two said that agricultural decisions were made by women, and two respondents claimed that decisions were arrived at collectively. Women who claimed to have control over decision-making also had responsibility for agricultural expenses. Similarly, male respondents from Magwanyana who claimed exclusive decision-making rights also paid for all agricultural inputs. Table 16 provides the distribution on decision-making by region of the respondent.

Table 16. Decision-Making by Region of Respondent

	Magwanyana (N=6)	Kalanga (N=15)	Mpologeni (N=12)	Lubombo (N=13)	Central (N=29)
	- - - - - Percent - - - - -				
Male homestead/ household head	33	40	33	23	--
Wife or female homestead/household head	33	40	17	55	27
Both	33	20	50	27	13

In Kalanga, decision-making is a more complicated issue because a distinction is drawn between the authority over dryland agriculture and irrigated plots. Two respondents (male) stated that they paid for agricultural inputs on dryland and irrigated plots, and made all agricultural decisions. When women control agricultural expenditures they do not always have control over decision-making. Two of the respondents, who were women, paid for expenses on the irrigated plots and retained authority for decision-making on the scheme. These same respondents suggested, however, that their husbands made all decisions about homestead (dryland) agriculture, despite the fact that these women paid all expenses for maize cultivation. Twenty percent of the Kalanga respondents stated that decisions were made on dryland and irrigated agriculture with the husband although inputs were purchased by the respondents.

In Mpolojeni, decision-making is the responsibility of both men and women according to one-half of the respondents. However, one of these respondents stated that he and his wife, "Talk things over, but then I usually decide." Another respondent stated that decision-making authority is split within their homestead depending upon the type of agriculture. Her husband paid for all agricultural inputs, but only made decisions concerning maize cultivation. She, on the other hand, had decided to grow cotton and made all subsequent decisions concerning that crop. Two respondents in Mpolojeni stated that homestead heads (or husbands) made all decisions on agriculture. Each male respondent claiming this authority also stated that he provided the necessary cash for agricultural inputs. Although the homestead head and her children sent money for all agricultural inputs, she made all the decisions.

In Lubombo, seven of the women respondents, or fifty-five percent of the sample in that area claimed that they made major agricultural decisions. It is important to note that four of these women stated that the homestead head was away working while in two cases the homestead head was deceased. Two male respondents, or thirteen percent of the Lubombo respondents stated that they paid for agricultural inputs and made all decisions without consultations with their wives. Twenty-three percent of respondents from Lubombo claimed that although men purchased agricultural inputs, decisions were made by their wives. Finally, seven percent of the Lubombo respondents suggested that although homestead agriculture was discussed by husband and wife, the husband was normally responsible for making final decisions.

The majority of the respondents (seven of twelve) in the Central RDA stated that agricultural decisions were arrived at jointly by both husband and wife or wives. Two of the women interviewed in the cooperative claimed that they paid agricultural expenses and had responsibility for making all decisions. One woman stated that the homestead head paid for agricultural expenses, but she maintained the right to make all decisions concerning agricultural production. In this case, the homestead head was living on another homestead with his second wife. It might be inferred that her autonomy and authority were obtained through his absence. Actually, this same woman stated emphatically that when she required funds for

school fees, agricultural inputs, and so forth, she told her husband what was needed and insisted that he sell a cow to cover expenses. In fact, she maintained that she made decisions about cattle sales.

As in the case of Kalanga and Mpolojeni, control over decision-making sometimes depended upon the crop cultivated. One respondent stated that her husband paid for all agricultural inputs and made decisions concerning maize cultivation. She, on the other hand, had decided to grow vegetables with the cooperative and subsequently took responsibility for all expenses and decisions required for the horticultural plot.

### Summary

Decision-making in agriculture occurred with similar frequency among men and women:

- o fifteen stated women made decisions;
- o thirteen stated men made decisions; and
- o thirteen stated both made decisions.

Respondents in all areas tended to favor their own sex when discussing control over decision-making. Men tended to report they made decisions exclusively, while women reported they either had exclusive decision-making control or made decisions jointly with their husbands. A greater proportion of female respondents than male respondents claimed that decisions were arrived at jointly with spouses, which would support the traditional power of males in decision-making.

Male control over decision-making is directly related to the time spent residing at the homestead. Females appear to gain increasing control over decision-making when males are absent for extended periods of time. Women most frequently make decisions on agriculture in the absence of the head of homestead or household. Sons and grandmothers may also occasionally make decisions on agriculture when the homestead head is absent. When women make the decisions or have joint decision-making authority with their husbands or homestead head, there are usually one of several conditions in effect:

- o the woman is paying for agricultural inputs;
- o the homestead head is away or deceased;
- o the husband has little interest in agriculture; or
- o the control over decision-making is crop-specific.

Males not farming full-time seem to be primarily interested in homestead-based agriculture. Women who were engaged in horticulture on the irrigation schemes or in Central RDA frequently claimed that decisions concerning the horticultural plots were made exclusively by women farmers. Maize cultivation, on the other hand, appears to come under the male jurisdiction in most cases. When males are engaged in farming on a full-time basis, they maintain

more control over decision-making in homestead agriculture. Women do not appear to achieve comparable authority, despite their contributions to homestead cultivation.

Men are predominantly responsible for purchasing agricultural inputs, including equipment hire. Male homestead/household heads provide the majority of agricultural expenses, while brothers and sons also contribute toward these expenses. Women's contribution to agricultural expenses comprise only one-fifth of total agricultural expenses within this sample. Women have less access to cash, and when they do have it, they tend to pay for immediate household needs such as school fees, food, medical expenses and clothing.

Although male respondents seem inclined to uphold the traditional powerful role of the men in homestead and agricultural decisions, it appears that women play a substantial role in these processes. It is difficult to ascertain precisely what role each gender plays in decision-making when members of each gender so obviously favor themselves when responding to questions concerning decision-making. It seems clear, however, that women frequently are consulted on decisions in the homestead when men are present.

When men are absent from the homestead, women have primary responsibility for agricultural decisions. This is especially true as the length of male absence increases. Because Swazi men increasingly must seek off-farm employment, it is assumed that women will bear more responsibility for all agricultural decisions in the future. Men may maintain control over major (or policy) decisions in agriculture, but women most likely control day-to-day decisions and supervise the homestead activities, including agriculture, in the absence of men.

Carlioni's (1982) FAO study of credit and marketing of smallholders in Swaziland, suggested that women members of irrigation schemes pay for all expenses on their plots, make all agricultural decisions, and have the right to decide how earnings will be spent, after first showing their earnings to their husbands. This is perhaps an overstatement. However, women engaged in cash cropping do seem to feel that they maintain some control over agricultural production and decision-making. This seems particularly valid when women obtain a surplus, or profits on crops other than maize. Maize production is so integrally tied to homestead subsistence and tradition that male control predominates over this aspect of agricultural production.

Women may be contributing extraordinary amounts of farm labor and playing a substantial role in agricultural decision-making, but they are unable to provide a significant contribution to financing agricultural endeavors. Women's lack of cash obviously constrains their control of agricultural production. Further, women frequently stated that money provided for homestead agriculture was frequently late and often insufficient to ensure successful agricultural production. Consequently, women are dependent upon men not only for the money for agricultural inputs but also the amount of money men are willing to spend on agriculture and the time when they send it. Nonetheless, men must rely on the

labor and cooperation of women in homestead agriculture despite their control over finances. Therefore, it is unlikely that male control over financial resources results in exclusive power over agricultural decision-making.

When the results of this study were presented in a seminar of Swazi government officials and USAID personnel, the section on decision-making caused the greatest amount of controversy. Like the respondents in the study, male participants claimed male dominance in decision-making on Swazi homesteads, while women claimed that female farmers made the majority of homestead decisions. Finally, one male participant volunteered to clear up the confusion by providing an illustration of a typical situation that might occur on a Swazi homestead. He stated:

Actually, women probably make almost all decisions. Say for example, on my own homestead, my wife makes all the necessary decisions while I am absent. She knows, however, that it is a male's right to make these decisions. Therefore, when I return home, she explains what decisions she had to make while I was absent and apologizes for taking the liberty. As expected, I scold her for overstepping her position. Later, of course, I will tell my friends with pride that I have a very clever, capable wife who can properly manage my affairs.

## Access to Information

A major thrust of the Ministry of Agriculture and Cooperative's programs generally, and the Rural Areas Development Program, specifically, is to provide agricultural extension services to Swazi farmers in an effort to improve and increase agricultural production. Furthermore, the Cropping Systems Research and Extension Training Project (CSRET) funded by USAID contains an extension training component that is designed to provide extension personnel with additional training and information to enable them to successfully assist small-scale farmers on Swazi Nation Land. This project component emphasizes the application of modern agricultural inputs and techniques that can be expected to improve the farmers' productivity and enhance the economic viability of commercial farming (USAID, 1981).

The relationship between the successful dissemination of agricultural information by the extension services and the adoption of advanced western practices by Swazi farmers has been demonstrated by de Vletter (1979). His survey of 1,150 homesteads on Swazi Nation Land concludes that farmers who receive advice from extension personnel are most likely to adopt advanced agricultural methods such as the application of chemical fertilizers, pesticide use, and crop rotation. The availability of extension assistance varies markedly by subeconomic region, type of farming, commitment and success of farming, and sex of the farmer. Farmers in the RDAs tend to receive more extension advice than non-RDA farmers. Further, it has been suggested that farmers in the cotton-growing areas receive more extension advice than farmers who concentrate on maize cultivation (de Vletter, 1979).

Male farmers tend to receive more agricultural advice from extension agents than female farmers. In fact, the CSRET project paper states, "Female farmers are visited less by extension agents than male farmers and those visited have fewer total contacts with agents than is the case of males" (USAID, 1981).

A study conducted on the status of women in the Northern Rural Development Area has shown that most women farmers were unaware of the services that agricultural extension workers should be able to provide (Andrehn, et al., 1977). Further, although two-thirds of the women interviewed in Andrehn's study expressed a desire to learn more about agriculture, these farmers did not know anyone who could advise them. Magagula states that women participate less in RDA programs and have less access to the services provided by the RDA administration primarily because, "Most extension agencies of the government and the field staff responsible for the delivery of services are still both male-dominated and male-oriented in approach" (1978:308). Barnes (1979) claims that women are visited less by agricultural agents because it is inappropriate in Swazi culture for male strangers to visit females on the homestead when men are not present. Male predominance in the agricultural extension service may severely limit the access of women farmers to agricultural advice, particularly in areas with a high

incidence of male migration. Additionally, extension agents may be reluctant to deal with women as it is commonly perceived that married women have little or no control over decisions and resources to make major changes or improvements in agricultural production (Andrehn, et al., 1977). Extension agents may simply assume that endeavors toward agricultural development may be more effective when directed toward men, as they maintain control over important resources.

MOAC and CSRET efforts to increase agricultural extension services for women include increasing the number of women extension agents and integrating women into agricultural development projects, such as the Cropping Systems Research and Extension Training Project. Currently, about eighty-five percent of agricultural extension agents are men. A goal of the CSRET project is to ensure that at least twenty percent of extension agents who participate in training will be women.

To assess the incidence of consultation with extension personnel among the respondents in this study, several questions were included in the questionnaire to obtain data on access to both agricultural and home economic extension agents, and the use of extension information. First, farmers were asked where they received agricultural information. Second, respondents were questioned on the frequency of visits or meetings with extension agents, and whether or not they perceived this amount to be sufficient for their informational needs. These questions specified contact with both agricultural and home economic extension agents as both may provide agricultural information. If respondents consulted with extension agents, we asked what information had been provided, and if they had utilized this information. Further, respondents were questioned about their current agricultural practices to ascertain whether respondents were using advanced agricultural methods.

Twenty-six of the forty-two respondents interviewed claimed to have received advice from extension agents. When disaggregated by sex, nine of the twelve men interviewed (seventy-five percent) stated that they received agricultural information from agricultural extension agents while only seventeen of the thirty women interviewed (fifty-seven percent) obtained agricultural information from this source (see Table 17).

Farmers who did not obtain agricultural advice from the extension services tended to rely on on-farm expertise or the assistance of other farmers. Fifteen of the forty-two individuals interviewed claimed to have consulted with extension personnel on a regular basis. For the purpose of analysis, "regular contact" is defined as at least once a month or whenever farmers perceived they needed assistance (see Table 18). Four respondents stated that contact with extension personnel was limited to meeting or field days, while three respondents noted that agricultural extension officers were only available during the ploughing and planting season. Three respondents stated that they did not have enough contact, while thirteen individuals stated that they never met with extension officers.

Frequency of consultation with agricultural extension officers depended upon the sex of the farmers. Men in the sample areas tended to consult with farmers more frequently than women or they were more frequently contacted. Further, women farmers interviewed in the study were more likely to report that they see extension agents very rarely or not at all (see Table 18).

Respondents tended to favor their own gender when asked which individual from the homestead consulted with the agricultural extension officer. The majority of male respondents claimed that homestead males, most often homestead heads, obtained agricultural advice from the extension officers. Similarly, female respondents stated that women most frequently consulted with the extension officers. In addition, it would appear that women tended to contact extension agents at agricultural meetings or field days, while men report more individual contact.

The majority of males and females who claimed to receive agricultural advice from the extension services stated that they implemented these suggestions. It is not always possible, however, for respondents to follow the extension officer's advice. For example, two respondents claimed that their contact with the officer was too late to utilize the recommendations during the past agricultural season. One male and one female stated that they could not afford to implement the officer's recommendations. Table 20 illustrates the frequency of men and women farmers claiming to act on agricultural advice.

Table 17. Source of Agricultural Information by Sex of Respondent

	Male	Female	Total
	- - - - -Percent- - - - -		
Agricultural extension	75 (9)	57 (17)	62 (26)
Other farmers	8 (1)	17 (5)	14 (6)
Themselves (family members)	8 (1)	23 (7)	19 (8)
Prison	8 (1)	--	2 (1)
No land (cannot farm)	--	3 (1)	--
Total	12	30	42

Table 18. Frequency of Consultation with Agricultural Extension Personnel by Sex of Respondent

	Male (N=12)	Female (N=30)
	- - - - -Percent- - - - -	
Regularly	58.3	26.7
Occasionally	8.3	20.0
Rarely or never	25.0	46.7
Don't know	8.4	6.6
Total	100.0	100.0

Table 19. Consultation with Agricultural Extension Officers  
by Sex of Respondent

	Male (N=9)	Female (N=17)	Total
	- - - - - Percent - - - - -		
Male at homestead	44	0	15.3
Female at homestead	11	35	27.0
Either male or female at homestead	11	6	8.0
Male at cooperative/meeting	23	0	8.0
Female at cooperative/meeting	0	53	35.0
Either at cooperative/meeting	11	6	7.0

Table 20. Utilization of Agricultural Advice from Extension  
Agent by Sex of the Respondent

	Male (N=9)	Female (N=18)	Total
	- - - - - Percent - - - - -		
Implemented advice	78	67	70
Tried to implement advice	11	22	19
Could not implement advice	11	22	19

The Impact of Extension Service

It is, of course, very difficult to evaluate the impact of the extension services upon homestead agricultural productivity. The majority of homesteads included in this sample used modern agricultural inputs, and in this respect the extension program has been very successful. However, unless one can observe the application and use of these inputs, it is impossible to know if they have been used correctly to produce the desired effects.

This problem is further complicated by the fact that few farmers actually produce crops for sale, or farm with an intent to produce a surplus. In fact, the Ministry of Agriculture has estimated that only five percent of farmers produce primarily for sale, and only twenty-five percent of farmers sell any produce at all (Andrehn, et al., 1977:55). Thus, it is not possible to evaluate the effectiveness of extension by measuring farmers' yields.

Therefore, the impact of the extension program upon farming practices, within the sample farms, was measured by the use of "modern" or advanced techniques by respondents. Respondents were questioned on their use of hybrid seed, fertilizers, pesticides, and other chemical applications. More male than female farmers were using hybrid seeds in the sample areas. Women who did not utilize hybrid seed seemed to be aware that hybrid varieties of maize often produce greater yields, but felt that these seeds were too expensive. In addition, several women pointed out that with local, Swazi maize, one can use the seeds year after year, whereas hybrid seeds must be purchased each season.

Male and female farmers exhibited comparable use of fertilizer and pesticides in their homestead plots. Therefore, it would appear that some farmers (particularly female) are applying chemical fertilizers to Swazi maize. Apparently, RDAP efforts to encourage the use of chemical fertilizers and pest controls, have been slightly more effective than efforts to encourage the adoption of hybrid seeds within the sample areas. Table 21 provides the frequency of farmers use of modern agricultural technologies.

Table 21. Access to Extension, Input Use, Surplus Production by Sex of Respondent

	Male (N=30)	Female (N=12)
	- - - - -Percent- - - - -	
Saw agricultural extension officer	57	75
Used hybrid maize seed	73	92
Used advanced methods (i.e., chemical fertilizer, pesticides, etc.)	80	83
Produced surplus/cash crop	50	83

The Farm Management Survey conducted in 1973/1974 by the MOAC, suggests that traditional seed shows a minimal response to chemical fertilizers. Thus, farmers who use modern inputs with Swazi maize may simply be wasting their time and money. Apparently, some farmers within the sample areas - particularly women - were not familiar with this fact.

An interesting result from this study shows that men tend to exhibit a much greater tendency to produce a surplus maize crop or engage in commercial farming than women. Few conclusions may be drawn from this result due to the disincentives to produce surplus maize and a tendency of farmers (as pointed out by Russell) to produce sporadic unintended surpluses. Nonetheless, it has been suggested that the extension services and the MOAC tend to view male farmers as more serious, modern, productive farmers. There is, furthermore, a history of directing agricultural assistance to males, particularly in the production of cash crops. During the earlier part of this century, at the encouragement of the British Administration, males began to engage in commercial farming activities, especially the cultivation of cotton and tobacco. Moreover, as Kuper has pointed out, "Land allocated to and cultivated by women is not regarded as a source of cash income" (Kuper, 1966:43).

#### Access to Agricultural Extension by Region

As seen in Table 22, irrigation scheme members received by far the most attention from extension agents compared to farmers in other regions. In fact, one hundred percent of irrigation scheme members interviewed stated that they received information from agricultural extension personnel. Further, five of the six farmers interviewed in Magwanyane stated that they consulted with the agricultural extension officer on a regular basis (see Table 23). One respondent stated, however, that she did not feel she met with the agricultural extension agent enough. Four of the five respondents interviewed on the Kalanga irrigation scheme stated that they had regular meetings with the extension officer. The remaining respondent claimed that he didn't know how often he saw the agricultural extension officer but he felt this officer was readily available. As indicated in Table 22, agricultural extension agents were equally accessible to both male and female members interviewed on the irrigation schemes. All irrigation scheme farmers within the sample used hybrid seeds, advance inputs, and managed to produce cash crops.

Table 22. Percent of Males and Females with Access to Agricultural Extension by Region

Sample Area	Male	Female	Total
	- - - - - Percent - - - - -		
Magwanyane	100	100	100
Kalanga	100	100	100
Mpolojeni	67	33	50
Lubombo	50	35	38
Central RDA	--	58	58

Of interviews conducted on homesteads in Mpolojeni, only three of our six respondents had meetings with the agricultural extension officer. Two of the three male respondents claimed to have consulted with agricultural extension personnel, while only one of three women interviewed had seen the officer. Male respondents seemed to have regular consultations with the officer. The female respondent who claimed to receive advice from extension personnel said she had only received assistance at field meetings, and those were held irregularly (see Table 23).

None of the farmers interviewed in Mpolojeni had produced a surplus maize crop, due primarily to the climate and the drought. All three women interviewed, however, were growing cotton for sale, using chemical fertilizers and pesticides for that crop. Two of three males interviewed in Mpolojeni were using hybrid maize seed, using modern inputs, and producing a cash crop (one cotton, one tomato).

Farmers in Lubombo interviewed for the present study did not appear to be receiving a great deal of assistance from agricultural extension officers. Only one of the four males interviewed had consulted with an agricultural extension officer on a regular basis. In fact, six of nine women interviewed in Lubombo stated they had never been in contact with agricultural extension personnel. Two female respondents stated they only saw the agricultural extension officer during planting season and the remaining female respondent claimed she did not know when she had last seen the officer. All male and female farmers who received agricultural assistance in Lubombo were using hybrid maize seeds, applying chemical fertilizer and producing a surplus of maize.

Table 23. Frequency of Consultation with Agricultural Extension Officer by Region and Sex of Respondent

	Magwanyane		Kalanga		Mpolojeni		Lubombo		CRDA	Total
	Male	Female	Male	Female	Male	Female	Male	Female	Female	
Regularly or when needed	3	1	1	2	2	-	1	-	2	12
Weekly	-	1	-	1	-	-	-	-	-	2
Monthly	-	-	-	-	-	-	-	-	1	1
Only during ploughing and planting	-	-	-	-	-	-	1	2	-	3
Not enough	-	1	-	-	-	-	-	-	2	3
Never	-	-	-	-	1	2	2	6	3	14
Didn't know	-	-	1	-	-	-	-	1	1	3
Total	3	3	2	3	3	3	4	9	12	42

Seven of the twelve members (fifty-eight percent) interviewed in the women's cooperative in CRDA suggested that they received agricultural information from the agricultural extension officer. Of the seven members who stated that they received agricultural assistance from agricultural extension personnel, four respondents claimed that their contact with this officer has occurred only as a result of involvement in the cooperative. Cooperative membership, therefore, has increased the access to agricultural extension personnel for women members.

In the women's cooperative in CRDA, the farmers interviewed showed a comparatively high rate of use of advanced farming techniques. Ten of twelve women used hybrid seeds and nine women applied fertilizers. The incidence of hybrid seed and fertilizer use in CRDA is greater than other dryland farmers included in the sample. It is possible that this farming behavior is a result of cooperative involvement; however, this relationship has not been established in this research.

The three respondents in CRDA who consulted with the agricultural extension officer on a regular basis prior to the establishment of the cooperative all used hybrid seeds, chemical fertilizer, and produced a surplus maize crop. It is difficult to ascertain whether the respondent's frequent consultation with the officer had an effect on farming practices or whether these individuals were progressive farmers who produced a surplus without extension assistance. Further, these individuals seemed to have responsibility for other cooperative members' adoption of "modern" farming methods. Because the sample size is small, it is difficult to obtain valid results when the data is separated by region and then further disaggregated by sex, but access to information appeared to vary according to the sex of the farmer.

#### The Role of the Home Economist

Eighteen of the forty-two respondents (42.8 percent) interviewed in this study stated that they or their wives had consulted with a home economist. Table 24 illustrates the distribution of responses by region.

Table 24. Percent of Homesteads Consulting with Home Economist by Region

Sample Area	Consulting
	- - - - Percent - - - -
Magwanyane	33.3
Kalanga	100.0
Mpolojeni	0.0
Lubombo	7.7
Central	91.6

Respondents in the CRDA and on the Kalanga irrigation scheme had the highest incidence of consultation with a home economist. All respondents interviewed on the Kalanga scheme (or their wives) had met with the home economist. Eleven of the twelve CRDA respondents from the women's cooperative had contact with the home economics officer. The high rate of consultation with the members of the CRDA women's cooperative was expected, however, as this officer was instrumental in the establishment of the cooperative and subsequent activities.

The Lubombo-Mpolojeni region received less assistance from home economists than any other region included in this pilot study. In fact, one respondent in Lubombo claimed the home economist had not been seen since 1979. Access to agricultural extension personnel was also relatively limited in this area. It is possible (although not adequately explored in this limited study) that extension services in Lubombo-Mpolojeni area are limited, with the exception of the irrigation schemes. Only one respondent on Magwanyane claimed to have had contact with a home economist. This respondent claimed that his wife had received agricultural and nutritional information that was used on their horticultural plot.

Home economics staff are responsible for the dissemination of a wide range of information, including agricultural and nutritional information. Consequently, respondents were questioned on the type of information received from the home economist. Table 25 provides the type of information received by region of the respondents.

Table 25. Type of Information Received from Home Economist by Region

Sample Area	Agriculture	Handicrafts	Cooking	Didn't Specify
- - - - - Percent - - - - -				
Magwanyane	200	--	--	--
Kalanga	40	20	20	20
Mpolojeni	--	--	--	--
Lubombo	100	--	--	--
CRDA	54	36	--	9
Total Information	55	28	5	12

The majority of respondents meeting with the home economists were, of course, women. In addition, most respondents claimed that they were receiving agricultural and nutritional information from a home economics officer. Ten of

the eighteen respondents who consulted with a home economics officer stated that they received information on methods to establish and manage a homestead consumption vegetable garden. Five of the eighteen respondents who received information from a home economist received instruction on producing handicrafts for home use and sale. One respondent received information on cooking, while two respondents could not or would not specify what information had been received from the officer.

### Summary

Approximately sixty percent of respondents claimed to have received agricultural information from agricultural extension personnel. A higher percentage of male respondents (seventy-five percent) received agricultural assistance from this source than female respondents (fifty-seven percent). Further, male respondents tended to consult with extension personnel more frequently than females interviewed in this study.

When male respondents consulted with agricultural extension personnel, they were more likely to receive information individually than to attend a field or cooperative meeting to obtain advice on agriculture. Although women were also receiving information on an individual basis, they were more likely to receive assistance from agricultural extension personnel in a group setting--either a "field day" or a cooperative meeting.

The majority of respondents claimed to utilize advice received from agricultural extension personnel. A greater percentage of males claimed to have implemented advice received from these officers than female farmers interviewed. Further, a larger percentage of women than men claimed to be unable to utilize advice for financial reasons or because advice was received too late.

Less than half of the study respondents had consulted with a home economist. The highest incidence of consultation with the home economist occurred on the Kalanga irrigation scheme and with the CRDA women's cooperative. The majority of information received from home economists concerned agriculture and nutrition.

It is not possible to draw conclusions on the status and accessibility of extension services in Swaziland from this small sample. The present pilot study does, however, suggest several trends that require further consideration and investigation. The incidence of consultation with agricultural extension agents may well have been exaggerated by the respondents. One woman who claimed to obtain agricultural information from "field days" also stated that she could never find out when field days were held. Similarly, a male respondent who said he received agricultural information from extension agents went on to add that he neither required nor sought information from this source. From these rather vague and contradictory responses it might be assumed that respondents felt that saying that they had received information from agricultural extension agents was perceived as the appropriate response. Therefore, it might be inferred that the incidence of consultation was actually less than the respondents claimed.

With the exception of irrigation scheme members, most farmers in the sample areas in this study do not have sufficient access to timely, accurate sources of agricultural information. Nevertheless, judging from the high incidence of hybrid seed use and utilization of "modern" inputs, it seems clear that the farmers interviewed in this study were approaching farming quite seriously and scientifically. Despite their attempts, a recent study has shown that a substantial number of Swazi farmers merely use guesswork when purchasing and applying chemical inputs (Magagula, 1978). Male farmers appeared to be able to achieve more success in terms of producing a surplus than females. However, farmers of both sexes had obviously spent money and time trying to achieve success.

Male farmers included in this study said they received the most information from extension officers (seventy-five percent of the respondents) and achieved a high incidence of surplus or cash crop production (eighty-three percent). Female farmers, on the other hand, received less information (fifty-seven percent) and were less likely to produce a surplus. Fifty percent of women respondents had surplus and/or cash crops, although they utilized hybrid seed and chemical inputs. It is possible that women farmers are simply guessing on modern agricultural methods and technology, and consequently, cannot produce their crops efficiently and effectively. Also, women may not have access to the same amount of labor and financial resources as men. Women perform an abundance of labor in non-agricultural activities, thus limiting their available time and energy. Certainly, this is an area that requires further research.

Within the limited boundaries of this study, the findings suggest that women's access to agricultural extension services increases when they are members of a recognized group or cooperative. All women interviewed on the irrigation schemes had equal access to extension services with their male counterparts. Access to agricultural information also increased for women respondents in the central RDA upon taking membership in the cooperative. Respondents in CRDA claimed that their cooperative was actively recruiting male members to increase their power, recognition, and influence within the RDA and the community. Male farmers' access to agricultural extension services also increases when they become members of a cooperative. It seems clear, therefore, that both male and female farmers receive more assistance when they act as a group.

Women receive more agricultural assistance when they are members of a group because they are more accessible in a group. In other words, there are no social restrictions placed on a group of women meeting with a male stranger. If, as Barnes (1979) pointed out, it is inappropriate for male extension workers to visit women on the homestead when men are not in attendance, group meeting may be the most appropriate means to reach women. Although extension agents visited female farmers in the irrigation schemes individually, this meeting occurred away from the homestead in a professional atmosphere and in the presence of other male farmers. Thus, our findings suggest that women were more likely to obtain assistance from agricultural personnel in a group setting than on an individual basis.

## Marketing

There is an abundance of evidence that the lack of consistently reliable markets for agricultural produce has been a serious disincentive to production (Carloni 1982; Sibisi 1981; and Low 1981). Marketing sources differ for each crop grown, and it would appear that none of the available markets are very fair or reliable. Furthermore, rural farms are typically a great distance from large produce markets, and transportation is either too expensive to rent or inappropriate for transporting large quantities of produce (i.e., public buses). While the government of Swaziland and several international donors are currently in the process of implementing a large market project, this project was only in the design phase while the present study was being conducted and thus, its effects were not in evidence at that time. Therefore, the data presented within this chapter represents the marketing situation in the sample areas prior to the implementation of nation-wide market strategies. The situation may have improved considerably since these interviews were conducted. It appears that the results of the present study confirm work done in earlier research efforts. A review of some of the existing research on marketing follows.

As previously stated, the available markets are crop-specific and thus, one must analyze the market system by the type of crop being produced. Surplus producers of maize, for example, have a limited number of alternatives when marketing their produce. They may sell to the Swazi Milling Company (SMC) or they may sell to their neighbors. Sibisi's (1981) study of keen farmers, provides many examples of farmers' frustrations when selling maize to the SMC. These problems include unreasonably low purchase prices and seemingly arbitrarily imposed standards and restrictions on the quality and quantity of maize purchase.

Selling maize to neighbors is not generally viewed as a very satisfactory alternative, although Russell's (1982) study shows that some farmers prefer this option to dealing with the SMC. Those who prefer to sell to their neighbors usually select this option to avoid the expense and problem of arranging for the transportation to market of surplus maize.

Problems in marketing maize to neighbors and friends include the inability of farmers to sell large quantities of surplus maize and the uncertainty that an adequate profit shall be realized. Russell's respondents claimed that friends and neighbors frequently request discounts on maize purchases and purchase such small quantities that often much of the maize spoils before it is sold. In addition, when surplus maize production is achieved for one farmer in a region, other farmers often also produced surplus maize in the same area. As one farmer in Lubombo claimed, "We sell to the SMC, it is impossible to sell maize here. When I have a surplus, all farmers in Lubombo have a surplus."

Vegetable production is also severely hampered by marketing constraints. Farmers who produce vegetables on a small scale may sell to neighbors satisfactorily, particularly if vegetable production is limited in that geographic area. Nonetheless, farmers who are engaged in horticulture frequently have limited access to water and must expend extraordinary amounts of time and energy to collect water for their crops. In addition, expenses for fertilizers and pesticides require that farmers obtain sufficient yields and profits from sales to continue in vegetable production.

Farmers who produce vegetables for sale on a larger scale, as in the irrigation schemes, also experience difficulties in marketing crops. As Carloni states, "The project preparation team argues that scheme farmers would grow more vegetables if they were assured a market. Farmers on the other hand expressed a willingness to grow only if the price is right. Right now, vegetable growers are vulnerable to exploitation by buyers because their product is highly perishable and they have no way of transporting it to market. They must wait for buyers to come to the scheme. Produce is marketed individually and producers have little bargaining power" (1982:14).

Within the present study, farmers were asked if they marketed agricultural produce, and if so, how and where. The respondents also were asked if they experienced any difficulties in selling their produce. While many researchers have documented difficulties within the existing marketing system, there is no data on whether farmers of both genders experience these constraints equally. It was assumed that because males generally enjoy more mobility and control over resources, they might have better access to markets. In fact, it would appear as though almost all farmers suffer equally from marketing constraints. A description of these difficulties follows.

Vegetable producers interviewed in the present study all appear to have problems marketing produce. All irrigation scheme farmers claimed that they simply waited for buyers to come to the scheme. They stated that although this was a very unsatisfactory marketing strategy, their lack of transportation left no other alternative. Six of twelve respondents interviewed at the schemes claimed that their vegetables frequently rotted before buyers arrived, which had caused them substantial financial loss.

In Magwanyane, half of our respondents claimed that they previously had an arrangement with the Swazi Central Cooperative Union (CCU) to market their vegetables. Respondents stated, however, that the CCU had cheated them by paying insultingly low prices for their produce, and connections with CCU subsequently had been severed. Carloni's report on a credit and marketing project notes that irrigation scheme farmers had frequently experienced problems with the CCU because of their "low prices, unreliable collection, and considerable delays in paying for produce" (1982:15).

Discussions with the AID horticulturalists and others working in vegetable production, have provided further illustrations of existing marketing difficulties. Frequently, farmers on irrigation schemes grow precisely the same type of

vegetables, thus exceeding buyer demand and lowering the purchase price of vegetables. Further, when difficulties occur with vegetables (i.e., disease, frost, and so forth) all farmers suffer similar losses because so many of them grown the same type of crop. It is interesting that farmers interviewed in this study did not perceive lack of diversity in crop production as a factor contributing toward marketing difficulties. It should be pointed out, however, that respondents were never questioned on this as a specific potential difficulty.

Three farmers interviewed in the present study who grew vegetables in other areas, claimed to have more success marketing their produce than scheme farmers. One farmer in Mpolonjeni, several miles from the irrigation scheme, experienced no difficulties selling his tomatoes. He claimed that friends and neighbors readily purchased his produce and he was able to realize a sufficient profit to continue in vegetable production.

Another respondent (also male) in Lubombo stated that his wives grew vegetables and sold them to neighbors. Respondents who were producing vegetables through the women's cooperative in CRDA also sold their produce locally, although only three had produced a surplus crop. Others who expected surplus vegetables in the future claimed that they would either sell locally or in Matsapa. They anticipated no problems in marketing.

Farmers who grew cotton on the irrigation schemes and in Mpolonjeni, claimed to have no difficulties marketing this crop. Marketing strategies were similar for both irrigation scheme and homestead cotton producers. Cotton was grown individually by each farmer or homestead and then transported and sold collectively to Matsapa Marketing with other farmers. Apparently, this marketing strategy reduced transportation costs and increased profits. As Russell (1982) claims, "the attraction of cotton lies in the low risk of crop failure and the ease of marketing. For our sample, the gin at Matsapa provides a certain outlet" (p.16).

Fourteen of our forty-two respondents or thirty-three percent, claimed to have produced a surplus or cash crop at one time. Nine respondents claimed to have sold their maize locally, while four stated that they sold maize to SMC. One respondent claimed her husband marketed the maize but she didn't know where. Six of the fourteen respondents who produced a surplus of maize claimed that transportation to market was a serious constraint. Two respondents claimed that they had to market maize at SMC because an abundance of maize had been produced in their areas when they had a surplus.

As previously stated, both male and female farmers in the present study appear to experience comparable difficulties in marketing. Although males may have greater access to cash, transporting crops to market (other than cotton) nevertheless beyond the financial reach of most of the farmers interviewed in this study. Thus, marketing may well be one area where both female and male farmers are equally constrained.

## Summary

The absence of viable marketing strategies for small-scale farmers in Swaziland is undoubtedly a major constraint towards successful adoption of cash-cropping activities. Although many farmers exhibit interest in pursuing full-time farming as an occupation, markets for agricultural produce are limited, sporadic and/or unaccessible. Sibisi has stated that, "the greatest constraint on maize production is marketing" (1981:3). She continues by pointing out that even successful "keen farmers" limited their agricultural production and adopt other non-farming business activities so that they may make a living, such as opening up small retail stores in the rural areas.

Farmers are simply at the mercy of whomever is available to purchase their crops because they have no alternative market. In fact, farmers have no available information on what crops are in demand and where the markets are. Actually, there is a large demand for vegetables in the Republic of South Africa and in the urban areas of Swaziland, but farmers have no access to this market directly. Consequently, they must accept whatever offer is made to them or they lose everything.

If cash cropping is ever to become a viable alternative to wage-employment or even an alternative source of income, then farmers must have markets that are fair, reliable, consistent, and accessible. It has been suggested that the government marketing program will provide transportation and cold storage to assist farmers in marketing their produce. If these services become available, the marketing problem shall be substantially reduced, at least for vegetable and fruit producers. Nevertheless, farmers must also have assistance in receiving current market information so they may adapt successful production and marketing strategies. Without assurance that reliable markets are available for the production of expensive agricultural endeavors, farmers will simply be unable to accept the heavy burden of risk.

Other Constraints in Farming

A major purpose of the present exploratory study is to identify and illustrate major constraints faced by Swazi farmers. Although the study has focused primarily on women farmers, it is also important to consider the current situation of male farmers and the constraints that they face. While the study was designed to obtain information on constraints in regard to cash, labor, decision-making, and marketing in agriculture, respondents were also asked what they felt their greatest constraints were as farmers.

Respondents in this small sample provided a variety of different answers. Most claimed that they experienced more than one serious difficulty in their agricultural activities, as Table 26 illustrates.

Table 26. Constraints in Farming

	Frequency of Response		
	Males	Females	Total
Failure of irrigation engines	3	4	7
Hippopotamus	1	1	2
Expense of agricultural inputs	7	12	19
Problems with obtaining credit (interest too high)	2	-	2
Environmental problems:			
Too dry	1	4	5
Heavy rain during maize germination	-	1	1
Shortage of land	2	2	4
Late planting; due to:			
Timely tractor/plow hire	1	2	3
Getting seed	-	1	1
Pests and plant disease	1	6	7
Weeds uncontrollable	-	3	3
Lack of agricultural expertise	-	2	2
Livestock consuming crops	1	2	3

Five of six farmers interviewed in Mpolojeni claimed that their major problem was lack of rain. This study took place during a drought, which is perhaps the primary reason for this complaint. However, water shortages were probably exacerbated by frequent and protracted failure of the irrigation pump engines, another common complaint. This situation may be remedied by now, as the faulty diesel pumps were being replaced by electric pumps while this study was being conducted. Several respondents from the Kalanga irrigation scheme reported that one of their major problems was a hippopotamus who resided in the irrigation dam and engaged in midnight feasts on farmers' crops. Earlier appeals to King Sobhuza had not precipitated removal of the hippo due to the King's concern for wildlife. Respondents viewed the existence of the hippo fatalistically, and assumed that the destruction of fences and crops would continue.

Approximately half of our respondents claimed that meeting the expense of agricultural inputs and tractor hire constituted their most serious constraints in agriculture. A higher proportion of male respondents (fifty-eight percent) than female respondents (31.5 percent) claimed that financing agriculture was a major difficulty. No female respondent claimed that limited access to credit was a deterrent to successful agricultural production. It may be assumed that because women have almost no access to institutional credit (without male sponsorship) that women did not perceive this to be a problem worth consideration. Two male scheme respondents stated that agricultural expenses seemed to cause a vicious cycle of financial strain. Inputs and tractor hire were so expensive that these respondents had to take out loans with very high interest rates that they could ill afford. Consequently, the profits received from agricultural produce seemed approximately equal to the expenses incurred.

Although several respondents claimed that they had difficulty in obtaining a tractor or ox-plough, it was surprising that so few respondents had experienced such problems. Informational interviews conducted previously with the CRS team in Mahlangatsha, Northern RDA, and Central RDA suggested that late planting frequently occurred because tractors were unavailable when needed. It is important to stress once again that the Central RDA women's cooperative had been organized specifically to obtain timely tractor services. It may be inferred, therefore, that including the women's cooperative and the scheme farmers (who also have access to RDA services) in the present sample perhaps accounted for unusually high rates of access to the tractor services. In fact, several members of the women's cooperative claimed that they had difficulty obtaining tractor services before joining the cooperative.

Control of pests, plant disease, and weeds were also mentioned as a major concern to approximately one-fourth of our respondents. Several (five) respondents stated that they had particular difficulty with cutworms and stalk borers, although these respondents had taken no steps to control the pests. Additional questioning of these female respondents suggested that they did not have any knowledge of a means to combat the pests. The male respondent who also claimed to suffer problems with pests stated that pesticides were very expensive and that he could not afford to purchase them. Respondents who suggested that weeds presented

a serious problem in maize production seemed well aware of the detrimental effect that weeds had on their maize crops. Although the problem was apparent to these women respondents, it would seem clear that these farmers could not obtain adequate labor to weed their fields in a satisfactory manner.

### Summary

Farmers in this sample experienced a variety of difficulties in their agricultural endeavors. The most predominant constraints according to farmers were:

- o expense of agricultural inputs;
- o pests and plant diseases;
- o environmental problems, specifically drought; and
- o mechanical difficulties with irrigation equipment.

Both male and female farmers considered the high cost of agricultural inputs and equipment hire to be a major constraint against successful farming. Males and females were also equally concerned about the problems caused by the failure of the irrigation equipment.

It would appear that the most critical difference in constraints faced by male and female farmers is directly related to their access to particular resources, especially labor, knowledge, and cash. Women probably perceive pests and plant diseases as a more serious problem for them because they have fewer labor resources than male farmers. Women must work harder to control the same weeds.

Thus, although male and female farmers may face similar constraints in small-scale agriculture, the alleviation of these requires different strategies for men and women. It is precisely for this reason that women farmers must be targeted for substantial assistance in agriculture. Their needs are more critical, and more integrally tied to the future success of agricultural development in Swaziland by virtue of their central role in homestead farming.

## CONCLUSIONS

The results of this study suggest certain trends in agriculture on Swazi Nation Land that warrant further study and consideration. Furthermore, certain aspects of this research appear to support larger, more comprehensive studies (i.e., Nxumalo, 1979; de Vletter, 1981, 1982; Russell, 1982). As earlier studies have demonstrated, women and children provide the major portion of agricultural labor on Swazi Nation Land farms. Men participate in the more strenuous agricultural tasks such as ploughing and land clearing. In addition, men often assist with the planting of maize, particularly when an ox-drawn planter is utilized for this endeavor.

Shortages of agricultural labor on Swazi homesteads, caused by the outmigration of men to wage-employment centers, tend to increase the amount of labor required of women in homestead agriculture. When adult men are absent from the homestead, women frequently must assume the more strenuous agricultural tasks in addition to the farm tasks they usually carry out. In the present study, women's contribution to agricultural labor increased substantially when the homestead head was absent from the homestead for more than a month. Moreover, the contribution of all adult males to agricultural labor decreased considerably when the head was absent from the homestead for extended periods of time. Within the Lubombo sample area, for example, approximately fifty percent of the homesteads reported that women were operating ox-drawn ploughs without the assistance of men.

In addition to performing most agricultural tasks in the absence of men, women also assumed an increased responsibility for making agricultural decisions. In the present study, women obtained almost exclusive control over decisions made on homestead farming when the male homestead head remained away from home for more than a month at a time. When the head was absent, his wife frequently assumed the responsibility for supervising homestead activities, including agriculture. If, however, the homestead head's mother resided on the homestead, she would often control the day-to-day activities of the homestead and the allocation of domestic and agricultural resources.

Thus, the results of the study support the hypothesis that female responsibility for managing and maintaining subsistence agriculture - including decision-making and control of resources - also increases with increased male absence from the homestead, especially the homestead head.

The division of agricultural labor and the participation of women in farming is also influenced by the composition and socio-economic organization of each homestead. In this study, men participated in farming with homestead women more frequently within nuclear family units than on extended family homesteads. In addition, within polygamous homesteads, the labor provided by both male and female family members was determined by the organization of polygamous households and

homesteads. When co-wives resided on separate homesteads, the place and term of residence of their husbands determined male participation in subsistence agriculture. When the wives of a polygynist resided on the same homestead, labor and agricultural produce were distributed equally between wives, and male contributions to agricultural labor were, of course, restricted to one farm. Within women-headed homesteads, women seemed to be able to enlist the assistance and support of their children and relatives for agricultural labor and financial resources. In fact, they seemed better able to control farming resources than women in any other type of homestead.

The participation of women in "modern" agriculture and/or commercial farming also appears to be influenced by the socio-economic organization of the homestead. Women participants on both irrigation schemes included in the sample all came from nuclear family homesteads. Three of the five male respondents interviewed on the irrigation schemes came from nuclear families, while two stated that they were polygynists. It might be inferred, therefore, that it is easier for women from nuclear family homesteads to participate on irrigation schemes because they receive more assistance from adult males in agriculture and are not constrained by the complex kinship structure that exists on many extended family homesteads. Male participants, on the other hand, may benefit from the more complex kinship organization found in polygamous marriages because they have access to more female labor. Thus, the type of socio-economic organization of each homestead will determine the contribution of both men and women to subsistence agriculture and the ability of each gender to participate in "modern" agriculture and/or commercial farming.

The participation of women in homestead and irrigated agriculture, and their control over farming decisions and resources are also determined by the role and status of women within the homestead. The respondents within the present study suggested that the mother of the homestead head frequently exerted a considerable amount of control over agricultural activities, resources, and decisions. One grandmother described her own position within the family: "I am old; I make all the decisions on family."

The wife of the homestead head or the senior wife in a polygamous marriage may also assume a significant amount of influence and control over homestead agriculture. She may expect contributions of cash and labor from her sons and daughters-in-law and may often receive assistance from her brothers-in-law and their wives. Senior wives, particularly those from royal or aristocratic lineages, often maintain control over the day-to-day activities of the homestead and command a certain amount of control over agricultural decisions and resources.

As previously stated, when women are the heads of homesteads, they may suffer certain social and financial disadvantages. However, they appear to control agricultural decisions and resources, and are often able to enlist the assistance of their children and relatives in subsistence farming. Therefore, it is likely that the age, status, and position of each woman will determine her role within the

homestead and her participation in agricultural management and decision-making. For instance, a daughter-in-law in an extended family unit homestead, has less opportunity to adopt innovative farming practices or engage in commercial farming than a more senior woman because she has less control over agricultural resources. Furthermore, although a junior wife or daughter-in-law of the homestead head may exert some control over the resources of her own household, her obligations in other homestead activities limit participation in commercial farming.

The result of this study also suggest that women may take advantage of agricultural development programs and projects more readily when they participate as a part of a group. Women within both Magwanyane and Kalanga irrigation schemes received as much advice and assistance from the agricultural extension services as their male counterparts. Similarly, participants from the women's cooperative in the Central RDA were able to obtain increased access to RDA services including the assistance of the home economics and agricultural extension services. Women probably receive more governmental attention when organized as a group for several reasons. First, women are more accessible to male extension personnel when group meetings can be arranged because it is inappropriate for male extension agents to confer with women individually if another man is not present. Second, it is possible that the extension services and other RDA sections take female farmers more seriously when they participate as a group, or as members of an irrigation scheme. Women may also gain increased access to governmental programs and services when they are represented by a group that includes male members (such as irrigation scheme cooperatives). Although women on the irrigation schemes received adequate assistance and information from RDA officials, women in the cooperative in CRDA were considering the recruitment of male members because they felt that male participation would increase their influence and credibility.

The access of farmers to agricultural development programs, modern farming equipment and inputs varied according to the geographic region of the respondents. Farmers in Lubombo reported a lower incidence of consultation with agricultural extension personnel than farmers in other regions. Despite the fact that the sample area in Central RDA was close to both urban centers and the RDA headquarters, farmers in this region exhibited greater difficulty in obtaining timely tractor hire than other farmers. Although farmers throughout Swaziland have frequently expressed concern about the problem of securing the services of the RDA tractor tools in time for spring ploughing, this difficulty is particularly pressing in the Central RDA. Farmers in Lutzelutze must share all RDA equipment and personnel with the King of Swaziland, as this region borders the palace. Obviously, the King's fields take precedence over other homestead plots. Consequently, farmers in Central RDA frequently must delay ploughing until the RDA tractors have finished the royal fields.

Agricultural production, and access to governmental services varied considerably according to the region of the respondents. Geographic location, however, did not seem to affect the sexual division of labor or the control and distribution of agricultural resources by gender. Male dryland agriculturalists

received more training and information than women cultivating dryland plots. Further, men consistently had more control over financial and labor resources than female farmers. Therefore, it may be assumed that women's participation in agriculture is determined more by their socio-economic status than by geographic location.

Almost all farmers interviewed for this study were interested in increasing both the quality and quantity of their agricultural produce. Fully eighty percent of the respondents used chemical technology and the majority were planting hybrid maize seed to increase maize production. It is clear, however, that Swazi farmers experience difficulty in implementing modern agricultural technologies and/or establishing a commercial farming enterprise. When compared with traditional farming methods, modern agricultural practices are considerably more expensive and require a substantial commitment from farmers in both time and labor. Further, the success of "advanced" farming practices, particularly chemical technologies, is dependent upon the correct application and utilization of methods and input. Swazi farmers should receive accurate, timely information from the agricultural extension services to acquaint them with the appropriate farming procedures, but often this is not the case. The Ministry of Agriculture and Cooperatives simply cannot meet the needs of all Swazi farmers, primarily because of limited personnel within the extension services. Currently, the ratio of subsistence farmers to extension agents is approximately three hundred to one. This ratio is inadequate to provide appropriate assistance to either men or women farmers.

Furthermore, when farmers decide to accept the expense, time, and commitment required in modern or commercial agriculture, they frequently find that they cannot market their surplus produce. Transportation to markets is often not available or is too costly. Even when farmers have access to markets, the profits made on agricultural produce may not be sufficient to compensate farmers for their investment.

The difficulties, expense, and risk encountered in the adoption of modern agricultural technology present major obstacles to many Swazi farmers. Male farmers are better able to overcome these limitations and participate in agricultural development than Swazi women farmers. While it is unlikely that development programs have been designed to exclude or pre-empt women from participating in modern agriculture, women's social and economic status precludes their successful participation in most conventional economic development strategies. Women are particularly restrained in their access to control over homestead and agricultural resources. Within the present study sample, constraints on women's participation in agricultural development involved the areas listed below.

- o Women received less agricultural information and training from agricultural extension personnel than male farmers. As Sibisi has pointed out, the extension services often assume that the homestead head is a farmer and all information and training is directed towards this individual, although he may be only minimally involved in subsistence cultivation. In addition, there is evidence through this study to suggest that although

women attempt to use modern agricultural technology, they realize little success because they have not received sufficient instruction in the use and application of these methods.

- o Women farmers have considerably less access to cash resources than men. Consequently, they are unable to purchase agricultural inputs and equipment or hire labor and equipment as readily as male farmers. Thus, although women might choose to use modern agricultural practices and technologies, their ability to implement changes in agriculture is dependent upon the cooperation and assistance of homestead males, particularly the head.
- o Women also have very limited access to credit sources because men control the ownership and allocation of cattle which serve as collateral for loans. Therefore women lack the capital necessary to increase agricultural production without male sponsorship. Further, when the homestead head obtains a loan for use in farming, he is really not in a position to control or supervise what is done with the money that is loaned to him. The homestead head is treated as though he were in fact the farmer at his home, while in reality his contribution is quite limited. Women's ability to adopt innovative farming practices would be greatly enhanced if they had access to financial resources, particularly from financial institutions.
- o As this study and other research has demonstrated, women frequently suffer from agricultural labor constraints. While male farmers may recruit all available homestead labor to assist with their agricultural production tasks, women may rely only on their own and their children's labor.

Because agricultural development policies and programs have been designed to increase male participation in agricultural production while decreasing male reliance on the wage-employment market, programs which specifically address the needs and constraints of women farmers have been few and ineffective. It may seem more expedient to design programs for men because they are not as constrained and restricted as women farmers, but there are several reasons that women's roles in agricultural production must not be ignored. These are outlined here:

- o Women farmers possess an expertise in farming that is passed from mother to daughter, making them familiar with local farming methods, conditions, and difficulties. If women were trained in modern agricultural methods, they could combine this knowledge with their traditional expertise to design appropriate agricultural techniques to increase homestead agricultural production. Further, women farmers would transmit this information to their daughters and other women.

- o Women farmers often undertake as a group the arduous and time consuming agricultural tasks for exchange labor or in-kind payment. These collective units could easily be used by extension personnel to provide agricultural information and training in an effective and culturally appropriate manner.
- o Women play a significant role in homestead agricultural decision-making. In fact, women appear to be gaining increased control over agricultural decision-making as male absenteeism increases. Even when men are engaged as full-time farmers or reside at the homestead full-time, women are frequently consulted for important agricultural decisions.
- o Recent studies in Swaziland, including this one, have suggested that women farmers are extremely interested in learning more about modern agricultural methods, and in entering the commercial farming economy. Women farmers are therefore both experienced agriculturalists and willing participants for agricultural development programs.

There has been a tendency, particularly within Africa, for agricultural development programs to be designed specifically for men, based on the assumption that men are more capable in commercial farming ventures and the utilization of modern technology (see Boserup, 1976). Nonetheless, as this and other studies demonstrate, when women receive adequate assistance, training, and support from agricultural development programs and projects, they are competent, aggressive farmers. On both of the two irrigation schemes in this sample, women farmers were able to compete with male scheme farmers in both quantity and quality of agricultural production, despite serious time and labor constraints. Furthermore, women farmers on the irrigation schemes exhibited as much understanding of and ability with modern agricultural methods as their male counterparts. Similarly, the women who participated in the cooperative in the CRDA demonstrated perseverance and determination in their agricultural and community development efforts, despite numerous obstacles.

Thus, it would appear that the results of this study support its initial hypothesis, which suggests that when women farmers can overcome socio-economic constraints they are at least as competent and productive as male farmers. As both Staudt (1983) and Mook (1976) have shown, when women may gain access to agricultural information, assistance, training, and the economic resources required for participation in modern agriculture, they are extremely capable, innovative farmers. Swazi women not only comprise one-half of the human resources of the nation, but they also represent the poorest, most disadvantaged sector of the population. For Swaziland's economic development to progress effectively and for the benefits

of economic growth to be distributed equitably, women must become equal participants in development strategies and programs. Furthermore, if the success of economic development is integrally tied to increased agricultural production and economic viability of homestead-based agriculture, the expertise, labor, and commitment of women farmers must be promoted.

## RECOMMENDATIONS AND POLICY IMPLICATIONS

For the agricultural development policies of the Government of Swaziland and USAID to succeed, strategies must be designed and implemented to address the needs, assets, and constraints of Swazi women farmers. These farmers comprise not only the bulk of the agricultural workforce, but they also possess the knowledge, experience, and commitment to farming necessary to increase agricultural production on the Swazi Nation Land. As such, Swazi women represent a potentially powerful force for economic and social change. The successful delivery of economic development to this group, however, will require a considerable change in existing agricultural development programs. Furthermore, women's integration in agricultural development strategies will require the creation of programs and projects that address their specific potential and constraints.

There is a natural tendency to simply increase or intensify current agricultural services in an attempt to encompass the female population; such a strategy will not necessarily enable women farmers to succeed in agriculture. Assistance to women farmers must address existing socio-economic constraints that restrict women's participation in agricultural development, particularly their limited access to information, cash, credit, labor, and government assistance. Specific measures to assist women farmers should include the following.

1. Extension personnel should be provided with an understanding of the important relationship between assisting women farmers and the achievement of national agricultural goals, through workshops, existing reports and manuals. Workshops and educational materials for extension personnel should be designed to stress the substantial contribution that women make to the agricultural sector and their importance as modern, knowledgeable agriculturalists.

2. The delivery of extension typically is differentiated by sex. Therefore, women are far more likely to meet with a home economist than an agricultural extension worker. Although home economists do provide some agricultural information, their knowledge of agricultural techniques and strategies is not as extensive as that of the agricultural extension workers. Consequently, women farmers do not benefit as much from these consultations. Therefore, it would be beneficial for home economic officers to receive additional training to increase and upgrade their agricultural knowledge and skills. In addition, agricultural extension personnel would benefit from a training program in areas typically covered by home economists, such as nutrition and health. Because the efforts of these extension branches overlap and complement each other, it is suggested that efforts to improve coordination between the home economics and agricultural extension section of the MOAC would increase the delivery of information on agriculture, nutrition, and diet.

3. Efforts to increase the number of female extension personnel are currently being implemented. It is one goal of the MOAC and the Cropping Systems Research and Extension Training Project to increase the number of women agricultural extension personnel from the current fifteen percent to twenty percent of the extension force.
4. Because women tend to receive extension assistance and training more readily when they are organized as a group, such as in a cooperative, it is recommended that extension personnel and the CSRET team utilize existing organizations to provide agricultural training and assistance. Furthermore, MOAC and the CSRET project activity should support and assist in the organization and maintenance of such groups.
5. Women lack access to other important resources such as cash, credit, and labor. Therefore, efforts must be made to ameliorate these constraints in addition to providing current, reliable sources of agricultural information. For women to be successful in commercial agriculture, appropriate strategies must be designed for them to obtain credit to improve their access to agricultural technology. This might be achieved through the creation of cooperative structures which would enable women farmers to obtain credit using group liability.
6. On-going research conducted by the AID CSRET project team and the Ministry of Agriculture constitutes an appropriate and favorable vehicle for undertaking additional research on Swazi women farmers. Research demonstrations conducted on homestead farms, and managed by women, should allow the CSRET team to obtain important information on:
  - a. the sexual division of agricultural labor;
  - b. women farmers' current level of knowledge and needs for additional agricultural knowledge;
  - c. seasonal labor constraints and demands;
  - d. the impact of homestead organization type on homestead farming and women farmers (i.e., differentiated farming practices of polygamous, extended, and nuclear homestead organization);
  - e. the relationship between wage-employment and commercial homestead-based agriculture;
  - f. appropriate development strategies for delivery of agricultural development to women; and
  - g. the needs and constraints of women farmers working with the CSRET team.

7. It has been recognized in this and other studies (Saunders, Carloni, etc.) that a lack of accessible, profitable markets for agricultural produce has severely restricted the establishment and success of commercial farming endeavors. The USAID CDSS update (1985) suggests that USAID should encourage the expansion of efficient, profitable markets for fresh and processed produce, for current and proposed agricultural projects. It is recommended that the CSRET increase their efforts to assist farmers to research and develop viable, profitable markets to help project participants recognize a fair profit for agricultural produce.

8. The introduction of new agricultural methods or production strategies should take into account that women are likely to perform the agricultural labor in addition to most other time-consuming homestead activities. Therefore, if possible, an effort should be made to introduce new crops and technologies that are not labor-intensive.

9. Cropping systems recommendations regarding the application of chemical technology should be administered with caution since women frequently work in the fields with their infants and young children.

10. Differential incentives to engage in commercial agriculture should be acknowledged and understood. Women may engage in commercial farming as a viable economic alternative to handicraft or beer production, whereas men have, though to a lesser degree than previously, the more lucrative alternative of wage-employment. The incentive for women will be greater if they are able to retain some control over agricultural production and investment. As noted earlier, women tend to be more effective agricultural producers when they are members of agricultural organizations, such as the irrigation scheme cooperatives, which allow them to maintain more control over agricultural decisions and profits.

HOMESTEAD \_\_\_\_\_  
 HOUSEHOLD \_\_\_\_\_  
 AREA \_\_\_\_\_

DATE \_\_\_\_\_  
 NAME OF HOMESTEAD HEAD \_\_\_\_\_  
 RESPONDENT \_\_\_\_\_  
 RESEARCHERS \_\_\_\_\_

HOMESTEAD COMPOSITION

Name	Relation to Head	Sex	Age	RESIDENCE		Major Occupation	Contribution to Farm Labour	Contr. to Family Income	Frequency of home Visits
				Homestead	Away (Where)				



Resources

Where does money come from and who decides how to spend it for:

DRYLAND

IRRIGATION

	<u>E.</u>	<u>Decision</u>	<u>E.</u>	<u>Decision</u>
Seed/Fertilizer				
Ploughing				
Planting				
Pesticides				
Other _____				
Where does money come from for:				
School fees				
Purchased foods				
Household Items				
Other major expenses?				

PRIORITIES FOR EXPENDITURES

For what do you need money?

If you had more money, how would you spend it?

Does your spouse have the same priorities for spending money?

Why? Whose Idea? Who decides when husband or household head is absent?

Where do you receive agricultural information?

Other farmers?

Husband/wife?

Extension?

How often does the extension worker visit your house?

Is this amount enough?

Who does the extension worker speak with when visiting?

Why?

Do you practice recommendations you received from extension workers?

Why/Why not? What information?

Does Home Economist visit your house?

If yes, how often?

Does Home Economist give you information on agriculture?

Do you practice recommendations you receive from Home Economist?

Why? Why not? What information?

Do you own?

Who cares for them ?

Cattle \_\_\_\_\_

Full

Part

Goats \_\_\_\_\_

Chickens \_\_\_\_\_

Sheep \_\_\_\_\_

Marketing

If have surplus maize, where is it sold?

If have cash crops, where are they sold?

Why did you decide to market these crops in this way?

Do you have any problems marketing? What? Why?

Who spends the money received from these cash crops? How is it spent?

If handicrafts or beer are marketed, how are they marketed and where?

Do you have any problems marketing these?

Who spends the money received from these handicrafts/beer?  
How is it spent?

CONSTRAINTS

According to your experience what do you consider as your greatest constraints in farming?

Homestead:

Irrigated:

What suggestions do you have as a means of coping with such constraints?

Would you like to make any changes in the type of crop(s) you grow at present?  
i.e. do you wish to introduce, increase, decrease or omit the cultivation of a  
crop?

If yes, would these changes be intended mainly for home consumption, for sale or  
both?

Is there anything you would like to learn about agriculture?  
If so, what?

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