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UNIVERSITY OF ALBERTA

FACTORS RELATED TO THE PERCEPTION OF MASTERY
OF ALBERTA FARM WOMEN

by

MAGDALEN T. MARGAI

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE

DEPARTMENT OF FAMILY STUDIES

EDMONTON, ALBERTA

SPRING, 1991



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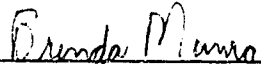
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "Factors Related to the Perception of Mastery of Alberta Farm Women" submitted by Magdalen T. Margai in partial fulfilment of the requirements for the degree of Master of Science.



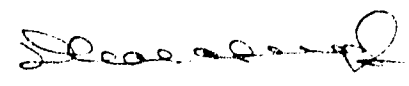
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DEDICATION

I dedicate this thesis to my husband Robert Margai and my two sons Anthony and Milton Margai. They have been very supportive throughout my studies. Their numerous letters and telephone calls guided me all the way to a successful completion.

ABSTRACT

Research that deals with the efforts to help farm women cope with stress by increasing their sense of mastery has important connections with research that deals with the broader issue of "women in development." Given the empirical relationship between mastery and stress (Keating, 1987), the overall objective of this study concerned itself, therefore, with the need to assist farm women in raising their own sense of mastery or inner power in order to control their personal, economic and political development -- otherwise thought of as empowerment. Thus, an effort was made to draw parallels between the concept of mastery among rural farm women in Alberta and the concept of empowerment in relation to the development of rural women in Sierra Leone and other Third World countries.

This study's specific purpose was developed from the larger theme described above -- to conduct a secondary analysis of data, collected from Keating and Doherty's 1985 study of Alberta grain farmers, in order to determine if demographic factors such as age, education, income, and farm land ownership influenced a farm woman's sense of mastery, focusing particularly on the sub-sample of 329 women who completed the third portion of Keating and Doherty's survey instrument.

The major finding is that education is the only demographic variable significantly associated with a farm woman's sense of mastery. Implications for this finding were discussed in terms of raising the level of education of rural farm women in order to raise their sense of mastery and, hence, to generate their own personal and socio-economic development.

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CHAPTER I
INTRODUCTION

Farm women the world over are faced with similar problems. In husband-wife relationships, the male is traditionally dominant and, consequently, women are subordinate to them (Janiewski, 1988). For this reason, women's roles in farming have been given little recognition, even though they play a vital role in the survival of the family farm or of farming as a whole. One could expect that the lack of recognition given to the vital roles which women perform in farming leads to high levels of stress for farm women.

Farming is one of the most stressful occupations in North America (Cebotarev, 1982; Smith, 1987; Weigel, 1981). Research has revealed that farm women, more so than farm men, have higher levels of stress (Busque, 1987; Berkowitz & Perkins, 1984, 1985; Lowe, 1989; Killien & Brown, 1987). A major reason for women's higher level of stress is the significant sex difference in the possession and use of psychological resources for coping. Women appear to lack effective coping resources or to make little use of them (Pearlin & Schooler, 1978).

Because stress is a debilitating factor in any situation, it results in lower self-esteem and lack of

self-confidence (Pearlin & Schooler, 1978). Such a situation could result in feelings of powerlessness and a consequent low level of mastery.

Keating (1987) undertook a study to examine ways of reducing stress among farm men and women. One of her major findings concerned the relationship between stress and mastery. She argued that mastery (the feeling that one has the ability to control one's life) is the best predictor of stress, or the best buffer against stress. This suggests that higher levels of mastery result in lower levels of stress. Because this study was concerned with the need to help farm women develop a higher sense of mastery, it leads to the question: What factors, then, influence mastery?

Recognition of the question led to the fact that there is literature to support the possibility. Pearlin and Schooler (1978), in a study concerning the "structure of coping," speak of sex, age, education and income as factors which influence mastery.

The knowledge of the factor or factors that influence mastery could be used to develop programs to help Alberta farm women develop socially, economically, and politically. Keating (1989) is of the feeling that in the long view, Alberta farm women will continue to increase their business involvement in their farms, and will need to be prepared to make sophisticated business

decisions based on markets and political trends. Mastery for them is, therefore, of great importance.

The writer is from Sierra Leone. She has worked with rural women and has an interest in empowering women in her country. An understanding of the factors which enable women to cope more effectively with work overload and the resulting stresses would be helpful in planning education programs for them. Rural women in Sierra Leone would be helped to gain control over their lives. Thus, the material for a research project and the interests of the writer came together. Knowing the relationship of the demographic factors to mastery would also be of help to governments in developing countries. Many governments are now attempting to bring rural farm women into national development (Khajapeer, 1987). It has been said that women should be the focus for any development to take place (Ocloo, 1987).

Two questions now appeared for which the data might provide answers:

1. What demographic factors influence mastery in Alberta farm women?
2. How are the factors relevant for work with rural farm women in Sierra Leone specifically, and in developing countries generally?

The format of this paper will be as follows: The known literature review on the various demographic factors which could affect the level of Mastery is to be found in

Chapter II. A discussion of the methodologies used in both the original study (Keating & Doherty, 1985) and in the present secondary analysis are described in Chapter III. Chapter IV presents the results of the analysis of the available data, while Chapter V discusses these results and makes some recommendations with respect to further research. Finally, Chapter VI reviews some of the very large body of literature on women in development, and extrapolates from the reported study to the problems of rural farm women in Sierra Leone, as well as some possible strategies to use in the amelioration of these problems.

CHAPTER II

REVIEW OF LITERATURE

It has been suggested that such things as age, education, income and ownership affect the degree to which people are in control of their lives and, therefore, the level of mastery which they possess (Pearlin & Schooler, 1978). A review of the relevant literature raises some important questions.

Nature of Mastery

Pearlin and Schooler (1978) conceptualize mastery as a psychological resource. As a psychological resource, mastery can help withstand threats posed by events and objects in an environment. They define mastery as "the extent to which one regards one's life chances as being under one's own control, in contrast to being fatalistically ruled" (Pearlin & Schooler, 1978, p. 5). Pearlin and Schooler developed a Mastery Scale which was meant to measure the extent to which people perceive events in their life to be under their control. Their findings suggest that one's sense of mastery (as measured by the scale) affects the response to a stressful situation. Similarly, Keating and Doherty (1985), using the Pearlin and Schooler Mastery Scale for their study,

found a direct relationship between the level of mastery and the amount of stress experienced by farm women (Keating, 1987).

Their understanding of mastery is not unlike the understanding of such other concepts as "personal competence" and "locus of control." Personal competence is explained by Wicklund and Brehm (1976) as a concept that denotes skills and adequacy. They describe someone who is competent as independent, with high levels of self-esteem and self-confidence and, therefore, able to influence situations in life. Similarly, locus of control is the perception of the ability to exert control over life situations (Rotter, 1966). The mere knowledge that one can exert control explains that one can withstand the effects of aversive stimuli.

If, as Pearlin and Schooler (1978) and Keating (1987) suggest, higher levels of mastery are associated with lower levels of stress, it becomes important to determine what factors are associated with or contribute to a sense of mastery in farm women.

This study proposes to work from the Pearlin and Schooler (1978) definition of "mastery." It will use the data collected by Keating and Doherty (1985) and will focus on selected demographic factors (age, education, income and ownership) thought to be associated with mastery. Mastery scores, using the Pearlin and Schooler scale, are a part of the available data.

Age and Mastery

Age has been considered one of the factors closely associated with mastery (Pearlin & Schooler, 1978). Age is valued differently by different societies (McDaniel, 1989). On one hand, societies such as China, Africa and other traditional societies believe that the status of a woman grows with age. In these societies, the older that one is, the wiser one is considered to be, because of past experience. This implies that it is more often the older people in such societies who provide readily available information about past events. On the other hand, societies in the Western world perceive old age as a period when one is no longer abreast of modern social and technological change. In this context, age is associated with progressively growing out of date, as well as with weakness and decline. The aged in such societies are seen as incapable of coping effectively with life strain. This is in contrast with the strong value placed upon youth (Charnes, 1985; de Beauvoir, 1970; Dulude, 1987; Martin-Mathews, 1982).

In contrast to McDaniel's idea, Kohl (1976) suggests that in Western societies, the older that one is, the freer one becomes to pursue social activities of one's own choosing. This is reinforced by Lachman's (1986) argument that choices can be made more freely as one ages. Aldwin and Ravenson (1985) relate increasing age to a higher level of assertiveness, a gain of more independence

and self-esteem. Ross (1982) relates this argument to persons involved in farm managerial activity.

There are various attitudes to age. For example: (a) one gains wisdom with age; (b) one is freer to choose activities which one does well and enjoys; (c) one's physical health determines what one is able to do; and (d) time and change leave a person behind -- one has become out of date. An examination of the literature will perhaps clarify these contradictions. The literature provides information on the relationship between age and experience (wisdom gained) and on the differences that exist between the physical abilities of people as they age.

Age and Experience

It is believed that young and old people behave or respond differently to stressful situations. This has to do with the individual's perception of the situation. Olbrich (1985) presents evidence to suggest that experience in dealing with similar problems in the past, or wisdom accumulated through the number of years lived, provides a rich resource of knowledge and skills for dealing with problems associated with stress. Older women would, therefore, appear to have higher mastery or control over younger women in situations where previous experience provides useful information.

Differences with Age

Boehlji (1973) and Bennette and Kohl (1982) identify three stages which divide the life cycle of the farming enterprise (beginning, expanding and contracting) and they compare these to three different age periods in the life cycle of farm people (youth, middle years and old age). They argue that farm women in their youth, middle age, and later years possess a sense of control over their lives in different kinds and degrees. For the younger woman, it can be said that whatever control she exhibits over things has to do mainly with her physical strength and energy, which is most useful in the "beginning stage" of the farming cycle. Because she can do the job, and because she is needed for the job, she has some control in what she does and how she does it. In light of this, Rosenfeld (1985) states that "youth can represent physical energy" (p. 264). Thus, younger women at the beginning stages of the farm enterprise usually participate actively in the physical labour aspect of the job (Ross, 1982; Jones & Rosenfeld, 1981). Such women, according to Keating and Munro (1988), usually work the equivalent of a full-time job on the farm. This ability and the recognition it receives may contribute to a sense of mastery in younger women.

Apart from the productive farm role which the younger women play, they are also highly involved in a reproductive role, hence they bear children and accept the

major responsibility of child care (Smith, 1987). This leaves no alternative but to coordinate child care with farm work. The time demands for these two activities are great, resulting in a high level of stress and frustration (Busque, 1987; Colman & Elbert, 1982; Smith, 1987). Keating (1987) finds that having a high level of stress is associated with a low level of control. Karasek (1979) reports that the pressure of these two roles poses the worst threat to an individual's sense of control. Often, the result of these pressures is less involvement in the farm operation.

Typically, in most societies, housework and child care are not seen as contributing to economic security. That is, they do not generate income. Therefore, the person who does this work receives little recognition. Withdrawal from economically essential farm labour, recognized as having high priority, and concentration on a "non-economic" role result in even less control over life situations (Fassinger & Swarzweller, 1982; Rosenfeld, 1985). It is therefore possible to anticipate that as women move from physical participation in the farm operation (the beginning stages of the farm operation) to child care and household tasks (the beginning stages of the family life cycle), their sense of mastery diminishes. Since these stages typically fall during the late teens and early twenties of the age cycle, it would appear that there might be a rise in mastery levels during the early

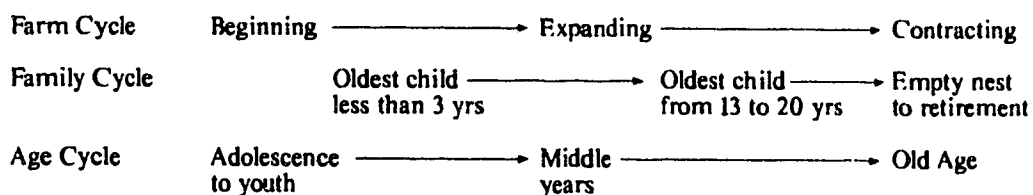
twenties while participating in the beginning stages of the farm cycle. This is followed by a slight fall in mastery as participation in the farming operation levels off and one enters the expanding stage of the family life cycle.

The second stage (expanding stage) of the life cycle of the farm is one of growth and expansion; therefore, it requires efficient use of labour (Boehlji, 1973; Bennette & Kohl, 1982). Women in the middle-age range, because they are free of child bearing responsibilities (Smith, 1987) and because they are still young and have vigour, as well as having accumulated ideas and some margin of time to use them (Boulding, 1980), are likely to be reinvolved in farm activity at this stage. A supervisory role of the farm work is one of the major roles for these women (Ross, 1982). Their children are now old enough to take on the duties of household and care of younger children (Heller & Mansbach, 1984). Researchers confirm that it is at this age (middle years) that active mastery increases, more creativity is established, more skills in problem solving are obtained, and more independence is felt (Cooper & Gutman, 1987; Kohl, 1976; Erickson, 1978). Here, then, one would expect to see a higher level of mastery achievement.

In the third stage of the farm cycle (contracting stage), a woman increases in age, her physical strength declines, changes in her sensory organs and intellectual

capacity take place, and she becomes less able to assess issues (Folkman, Lazarus, Pimley & Novecek, 1987). Since the senses are the means through which people can communicate with their environment, a change in any of these senses will lead to the inability to maintain independence and a sense of security, resulting in a lack of sense of control or mastery. As changes in the technology and information systems leave her behind, she also begins to lose a sense of control. Figure 1 attempts to show the interrelationship between these stages of farm and family life cycles and age.

Figure 1
Farm - Family - Age Life Cycle



The literature appears to support that whatever masculine the younger woman possesses, it is because of her physical strength and energy, which enable her to take on significant tasks requiring these attributes (Rosenfeld, 1985). The older the woman, the more control she has over things which require the use of experience or wisdom

(Ross, 1982). As old age progresses, both physical and mental capabilities become less effective and there is likely to be a loss of a sense of control or mastery (Charnes, 1985). One might therefore expect to find some relationship between age and the degree of mastery possessed by farm women.

Education and Mastery

Pearlin and Schooler (1978) refer to education as having a close association with mastery. In their view, "the better educated . . . are able to rely on positive comparisons in dealing with . . . problems" (p. 17). On the basis of their findings, Pearlin and Schooler suggest that people who are educated have better access to effective coping techniques. Having the skills to cope provides an individual with the ability to influence situations, thus making it easier to have control over his/her life. Along this vein, therefore, Pearlin and Schooler suggest that education is one of the factors that affect the degree of mastery which a person possesses.

Education is important for many other reasons. Torrey and Thornton and their associates argue that education provides a broader knowledge base through access to news and ideas; it is seen as a liberalizing factor. They continue their arguments that education also contributes to an individual's personal aspiration, and provides opportunities for both economically and

psychologically rewarding jobs (Torrey, Kinsella & Taeuber, 1987; Thornton, Duane & Camburn, 1983). Schultz (1975) points out that education makes a substantial contribution to agricultural productivity in a rapidly changing environment. In general, education should increase the facility and speed with which new farm skills and techniques can be learned.

One can therefore conclude that education enhances a farmer's ability to know his or her alternatives. It provides access to new farming practices, thereby helping to discriminate between the differences in the quality of farm products and to judge quality more accurately (Dean & Lawrence, 1982). Dean and Lawrence suggest that by giving access to information about markets and prices that assist in decision making about farm management, education is contributing to the farmer's sense of control. In short, it can be said that education improves a farmer's market efficiency.

Since education plays a vital role in an individual's economic and occupational pursuits, some researchers believe that farm women with more education--especially with a college education -- are more likely to have better-off farm jobs than those without college education (Rosenfeld, 1985; Hathaway & Perkins, 1968; Block, 1984). Better-off farm jobs, according to Rosenfeld (1985), lead to a higher occupational status. This would make people feel good about themselves and at

the same time see themselves as having control over their lives.

Apart from giving access to better-off farm jobs, education can also play an important role in raising a woman's productivity on the farm (Rosenfeld, 1985), thereby increasing her contribution to the farm operation as well as her self-esteem. For example, Rosenfeld explains that a woman who has had some accounting courses can assist the farm operation by keeping the farm books. In this way, she takes part in farm decision making.

A higher education for farm women is valuable not only on the farm or in off-farm jobs, but in the home as well. It provides access to resources which help in effective household decision making and it develops skills which help in all aspects of home management (Rosenfeld, 1985). Collette (1989) confirms that education is the main way in which women can exercise direction and control over situations in the home.

Education provides income as well as knowledge to run the home effectively. The greater the knowledge base of farm women, the more likely they are to be consulted. The literature on education would seem to suggest that the higher a farm woman's level of education, the more control she would have over the direction she would take in life (a) in determining where she would work, (b) in contributing to farm decision making, (c) in contributing to farm income, and (d) in managing the household

operation. The greater the control which she has over these factors, the more likely that a farm woman would have a high sense of mastery.

Income and Mastery

There is a positive association between income and mastery (Pearlin & Schooler, 1978). Increasing evidence suggests that income can have beneficial consequences for one's psychological well being (Martin & Hanson, 1986; Alderman, 1987). Other researchers report that higher income levels result in higher levels of control over life situations (Hackman, Pearce & Wolfe, 1978; Alderman, 1987; Bryant & Veroff, 1984).

Income plays an important role in stabilizing family relationships and in reducing stress. The higher the income, the greater the opportunities to purchase goods and services which reduce workload and increase leisure time. The result may be more control over one's life.

The importance of off-farm income is evident in farming communities. The changing nature of agricultural production in North America has had a severe impact on the family farm (Koski, 1982). In adjusting to this reality, Koski says, "family farms have come to rely increasingly upon off-farm incomes in order to manifest their commitment to a farming life style" (p. 12). Farm debt is one of the major impacts on farm families and, in order to

avoid farm debts, according to Hill (1981), some farm families are often involved in off-farm employment. "Sixty percent of farm families (in the United States) derive at least half of their incomes from non-farm sources" (Hill, 1981, p. 376). Farm families with small acreages are not totally dependent on farm sales, but expect that farm sales will be supplemented with income from employment off the farm. Farm families who run larger farm enterprises depend more on income from farm production (Rosenfeld, 1985; Fassinger & Swarzweller, 1984). When the operation is worked by heavy machinery, the women attached to such operations are frequently free to have off-farm jobs. Often, it is the farm woman who brings in what off-farm income comes to such a large operation. Often, it is this income that provides a modicum of income security for the farm family.

The contribution of an income, according to Nye (1978), often allows for participation in managerial decisions. Such recognition raises the level of one's self-esteem and self-confidence (Ross, 1982).

The literature on income would seem to suggest that the higher a farm woman's level of earning and the degree to which she contributes income to the farm operation, the greater her decision-making power, as well as her controlling power. The extent to which she feels in control is the extent to which she exhibits a sense of mastery.

Ownership and Mastery

Land is cherished because of its symbolic association with the family name. One land owner in Salamon's (1984) study reports, "This land is worth a million and a half, but money can't buy this land" (p. 169). Similarly, Gilbert and Harris (1984) talk about land having a psychological and cultural significance, offering, for instance, the pride of ownership and a sense of personal security. The sense of being a part of something over time -- "family pride," pride in "working the land," pride in "one's occupation" -- increases the sense of well being and control.

Sprey's (1975) study refers to the fact that land ownership gives power to farmers, and that power has the potential to effectively control the direction or outcome of an action or course. One major aspect of power, according to Sprey, is the ability to control the options available to others. Sprey says that it is power that gives people the privilege and authority which are so desired in society. The difference, therefore, between land owners and the landless is one of the key social divisions in American society (Popper, 1979). Land bestows upon its owner a measure of social, political and economic power.

When women become widowed or when they inherit lands from their parents, they are in a position to control that land. Salamon and Keim (1979) note that land

inherited by a woman has almost, without exception, been held in her maiden name. In this way, the woman can retain ultimate control. The status of women who control their lands, or the distribution of production from these lands, has been found to be higher than for those women in societies who contribute labour alone (Friedl, 1975; Sanday, 1973). The power of female land owners is not a hidden power, but an obvious one to the woman's community and to her family (Sprey, 1975). Because land is a scarce resource, Salamon and Keim (1979) confirm that women who inherit it have control over a most valuable and significant farming resource. It can be proposed that since land ownership gives power to people, and power ultimately results in control, women who are land owners would have a higher sense of mastery.

Similarly, a farm wife who is a legal partner to a farm enterprise has all the rights and benefits provided in the partnership agreement governing the enterprise (Rosenfeld, 1985; Boivin, 1987). Such a wife, Boivin says, participates in the profits and the losses of the operation. There is, therefore, an undeniable advantage for a farm woman to have a written partnership contract. Such a contract provides secure legal and economic recognition for her work, as well as enabling her to more easily predict the legal consequences of any given action, which results in sharing the work as well as the power (Boivin, 1987).

Decision making is another important role which land owners have (Fassinger & Swarzweller, 1982; Salamon & Keim, 1979; Boivin, 1987). These researchers suggest that a woman who has land has total control over that land, and therefore has control over any decisions made with respect to the farm operation.

Ideas gathered from the literature on farm ownership imply that power derived from such a status enables one to have control over situations in life. This would lead to one's sense of mastery. Therefore, it might be speculated that farm women who are land owners have a greater sense of mastery than those who are not.

Summary

This review of the literature pertaining to mastery, self-confidence, self-esteem, and locus of control leads to the following conclusions.

Age

1. To the extent that physical strength gives one a sense of control over one's farm work activities, the younger the farm woman, then, the more mastery she is likely to possess.
2. As one ages, one begins to lose control physically and in some cases mentally (Dulude, 1987). Therefore,

women in their old age would be expected to have a low sense of mastery.

Thus, if mastery has to do with control over the non-physical aspects of farming (managerial, marketing, organizational and other knowledge-based skills), then the women in the middle age range have a higher sense of mastery than either young or very old farm women.

Education

1. Education improves a farmer's market efficiency (Dean & Lawrence, 1982).
2. Education improves a farmer's off-farm employment opportunities and, hence, his/her earning power (Rosenfeld, 1985).
3. Education increases the speed with which new farming skills and techniques are learned (Torrey et al., 1987; Thornton et al., 1983).
4. Education helps in decision making in the home, on the farm, and in off-farm work (Rosenfeld, 1985).
5. As a result of the acquisition of skills through education, one would have readily available alternatives from which to choose in order to reach a goal successfully.
6. If education provides better opportunities for income generation and for participation in farm management, then, presumably, one would have higher levels of confidence and would feel more in control of life.

Therefore, the extent to which one feels in control will determine the degree of mastery that one has.

From the above conclusions, one would expect that the higher the level of education, the greater the sense of mastery.

Income

1. Income is an achieved characteristic (Pearlin & Schooler, 1978); it has a positive relationship with psychological well being, particularly for women (Alderman, 1987).
2. Secured income stabilizes family relationships (Holmstrom, 1973).
3. High income leads to job satisfaction. The higher the job satisfaction, the higher the personal control (Bryant & Veroff, 1984).

It is likely, therefore, that there will be a positive relationship between income and having control over one's life (mastery).

Ownership

1. Land ownership and/or legal partnership confers power -- power to control others' lives and work (Sprey, 1975); power to distribute farm income (Fassinger & Swarzweller, 1984; Friedl, 1975; Sanday, 1973).

2. Land ownership gives status or recognition (Sprey, 1975; Salamon & Keim, 1979). Such qualities enable one to have control over life's situations; having such control implies having a greater sense of mastery.

Farm women who are land owners or in legal partnership to farm land could be assumed to have a higher sense of mastery than those women who have no land and who are not legal partners to farm lands.

The Research Question

Keating and Doherty (1987) established that Alberta farm women had a high sense of mastery. Using the data from the Keating and Doherty research, and with particular interest in the factors affecting the mastery possessed by Alberta farm women, the following questions have been formulated for study:

1. What factors are related to a sense of mastery in Alberta farm women?
2. Is there a relationship between a farm woman's age and the degree of mastery which she possesses?
3. Is there any relationship between the level of schooling and the level of mastery in Alberta farm women?
4. Is there a relationship between the level of income earned by Alberta farm women and their sense of mastery?

5. Is there a relationship between the type of ownership of farm lands and the degree of mastery possessed by Alberta farm women?

CHAPTER III

METHOD

To address the research questions of this study, a secondary analysis of data, collected in a large research project of Alberta farmers during 1984 and 1985 by Keating and Doherty, was carried out. A brief description of this research project is therefore relevant at this point.

Original Research Project

The main purpose of Keating and Doherty's (1984/85) original project was: (a) to describe the work patterns and relative contributions of the members of the farm production unit to the farm operation; (b) to record the evaluation that the farmers and their spouses made to their work roles; and (c) to assess the health of these farmers as reported by stress and control factors.

Sample for the Larger Project

At the time that Keating and Doherty conducted their study, there were approximately 44,227 farm units in Alberta. From this total number of farm units, a stratified random sample of 3,000 farms was selected for the survey. This sample, drawn by Statistics Canada, was

stratified according to the eight crop districts into which the province of Alberta is divided. Two random samples of 1,500 each were surveyed in November of 1984 and February of 1985, respectively.

Out of the 3,000 farm units targeted for their survey, Keating and Doherty received completed questionnaires from 414 farm units, comprising 398 men and 329 women. This represented a 14 percent response rate. To be eligible for inclusion in the study, a farmer must receive at least 51 percent of his/her income from crop sales and must own a farm which was at least 20 acres in size. The population identified for the study comprised Alberta grain and oilseed farmers consisting of both farm owners and operators.

Survey Instrument

To investigate areas of farm families' work -- how they feel about their work and their experiences with stress, a three-part questionnaire was developed. The first part was concerned with the size, productivity and economic viability of the farm, as well as the number of people involved in farm and household operation. This part of the questionnaire was designed to be completed by all male and female respondents.

The second part of the questionnaire focused on information about hours of work of farm families in different work role patterns, their satisfaction and

salience of roles, their personal relationships, their physical and psychosomatic health, their sense of mastery and, finally, demographic and family variables. There were two versions of the second part of the questionnaire. Both were identical -- one for the male operator or farm husband, the other for the female operator or farm wife.

The third part of the questionnaire was completed by the female operator or farm wife. The whole questionnaire was intended to gather required information about Alberta grain farmers and was developed specifically for that project.

Mastery Scale. One instrument included in the questionnaire constituted Pearlin and Schooler's (1978) Mastery Scale. This scale was part of a larger investigation into the social origin of personal stress.

Stress Scale. The other instrument included in the questionnaire consisted of Berkowitz and Perkins' (1984) Stress Scale. Their stress scale consisted of eight items, taken from an original study of a 22-item screening scale developed by Langner (1962).

Procedure

Statistics Canada's regional office in Edmonton was responsible for mailing out the questionnaire. In so doing, the confidentiality of the respondents was

maintained. An introductory letter explaining the purpose of the project was mailed with the survey questionnaire. A set of instructions and a metered return envelope for the completed questionnaire were also attached. Two weeks later, a follow-up, reminder card was sent.

To ensure validity of the questionnaire, drafts of the questionnaire were pilot-tested. Pilot-testing was done on three groups of farm men and women. Each group gave feedback, out of which appropriate revisions of the instrument were made. Furthermore, feedback was solicited from experts in the fields of Survey Research, Rural Sociology, and Home Economics, all at the University of Alberta, to testify to the face validity of the questionnaire. Finally, authorities at Alberta Agriculture were contacted for their feedback to the questionnaire. Revisions were made to all the feedback, as was done with the pilot-testing feedback. These procedures were taken in order to increase the probability of the questionnaire's validity -- that the questions measured what they were intended to measure.

Response Rate

As stated earlier, the response rate reported by Keating and Doherty was 14 percent. The low response rate introduces certain biases into the sample. Since Keating and Doherty did not have access to non-respondents, the possible reasons for biases could only be speculated. For

example, due to the length and complexity of the questionnaire, it may be speculated that the respondents who completed and returned them were better educated than average. Moreover, the relatively large proportion of the respondents who were joint owners of farms suggested that the survey may have been of more interest to those couples where both have a legal stake in the farm operation.

The Present Research Project

The main purpose of the present research project was to examine certain demographic factors from the original study conducted by Keating and Doherty in order to determine which of these factors can influence Alberta farm women's sense of mastery.

The Sample

A sub-sample of the original study was selected for the present research study. The sub-sample comprised a total of 329 adult females, most of them married or living in a common-law arrangement, in Alberta farm households who resided on the farm and who completed the third section of the questionnaire, that is, the section addressed to the female farm operator or farm wife.

Study Variables

Criterion Variable. The criterion variable is mastery. The Mastery Scale, taken from Pearlin and Schooler (1978), consisted of seven items scored on a five-point Likert-type scale, ranging from "strongly agree" to "strongly disagree" (see Appendix C). Respondents were asked to indicate on the scale how best they could describe their feelings for each of the seven items.

Predictor Variables. The predictor variables consisted of four demographic variables, measured in association with the Mastery Scale. These variables include measures to describe farm women's personal characteristics, such as age, educational level, level of income, and status as land owners. Education, off-farm income and age were measured as continuous variables at the ordinal, interval and ratio levels of measurement. Ownership was measured as a multichotomous variable, with no ownership being equal to 1, some ownership being equal to 2, and sole ownership being equal to 3. All predictor variables were single-question items on the questionnaire (see Appendix C).

Data Analysis

The main purpose of this study was to analyze and determine what demographic factors (as mentioned earlier) influence the sense of mastery of the female sample population in this study.

The SPSSx package was used for the analysis of this data. A frequency distribution was calculated for the criterion variable (mastery) in order to determine the level of mastery of Alberta farm women. The other research questions were answered utilizing statistical techniques, as follows.

A Pearson correlation coefficient analysis was conducted to determine the relationship between mastery and each of the demographic variables, that is, age, education and income. The Pearson correlation coefficient (r) is a measure of the extent to which the criterion variable and the predictor variable co-vary.

A curvilinear regression analysis testing for a quadratic trend was also conducted for age and mastery. A cross-tabulation was carried out for the other demographic variable (ownership) and mastery. Finally, scatter plot diagrams of the data for each of the four demographic variables were made. This final step was taken in order to ensure the relationship or no relationship effect of the predictor variables on mastery.

CHAPTER IV

RESULTS

This chapter reports on the characteristics of the present research sample, the descriptive statistics of the sample's distribution on the mastery scale, and the relationships between the demographic variables of age, education, income, and ownership with mastery.

Sample Characteristics

Age

The women in the sample group ranged in age from 20 to 76 years, with a mean age of 42.5 years and a modal age of 33 years. Table 1 depicts the percentage of women falling into the various age categories.

Table 1
Distribution by Age of Study Sample

Years	Frequency	Percentage
20-24	13	4.0
25-34	89	27.3
35-44	86	26.4
45-54	78	23.9
55-64	48	14.7
65 and over	12	3.7
Total	326	100.0

To assess whether this age distribution is representative of Alberta farm women, the distribution of age for Alberta farm women based on the 1986 Statistics Canada census is presented in Table 2.

Table 2
Age Distribution for Alberta Farm Women

Years	Frequency	Percentage
20-24	12,450	11.1
25-34	28,485	25.4
35-44	23,695	21.1
45-54	17,665	15.7
55-64	15,140	13.5
65 and over	14,780	13.2
Total	112,215	100.0

Source: Statistics Canada 1986. Urban and Rural Areas, Canada, Provinces and Territories, Part 1, Catalogue Number 94-129, p. 98.

Examination of Tables 1 and 2 reveals that the study sample under-represents the 65-and-older group, but over-represents the 25-to-³⁴ age group. This pattern is very typical of self-administered, mailed questionnaires (Dillman, 1978).

Education

The education level of women in the sample group ranged from elementary schooling to graduate/university degrees. Almost one-half (46.9%) of the women in the sample reported their highest level of completed education as being high school. Table 3 provides a complete breakdown of levels of education.

Table 3
Distribution by Level of Schooling of Study Sample

Level of Schooling	Frequency	Percentage
Elementary	9	2.8
Junior High	37	11.5
Senior High	151	46.9
Technical Vocational	83	25.8
University Degree (undergraduate)	29	9.0
University Degree (graduate)	13	4.0
Total	322	100.0

In order to assess whether the education distribution of this sample is representative of farm women, the percentage distribution of education levels for Canadian farm women, based on the Statistics Canada 1986 census data, is presented in Table 4 along with percentage distribution of education levels of the sample group. For comparability of the sample group's data with the census data, some of the categories of the sample group were collapsed. (Note that desired information on education levels of farm women for the province of Alberta was not available from published census data. Thus, Table 4 is based on data collected for all Canadian farm women.)

Table 4
Comparison of Percentage Distributions of Sample Group
on Levels of Schooling with Statistics Canada 1986 Census Data

Levels of Schooling	% of Sample Group	% of 1986 Census Data
Less than Grade 9	2.8	18.0
Junior or Senior High	58.4	44.0
Post-secondary	25.8	25.0
University Degrees	13.0	13.0
Total	100.0	100.0

Source: Statistics Canada 1986 Census Data, Socio-economic Characteristics of the Farm Population, Catalogue Number 96-114, p. 38.

It is revealed upon examination of Table 4 that, proportionally, the sample group included considerably fewer farm women in the elementary school education category than nationally fell into this category. By contrast, the sample group was over-represented in the junior-senior high school category. The percentages of farm women represented in the post-secondary education categories were comparable, suggesting that the Alberta study sample was more educated than Canadian farm women in general. Again, this pattern is typical of research samples surveyed by mail (Dillman, 1978).

Marital Status

Not surprisingly, nearly all (97.4%) of this sample of Alberta farm women were married or living in common-law relationships. Table 5 provides a breakdown of the sample by marital status.

Table 5
Distribution by Marital Status of Study Sample

Marital Status	Frequency	Percentage
Marricd	315	96.4
Common Law	3	0.9
Never Marricd	0	0.0
Widowed	7	2.1
Separated	1	0.3
Divorced	1	0.3
Total	327	100.0

As Table 5 reveals, no women were single, never married. Only nine women (2.7%) were widowed, separated or divorced.

In order to assess whether the distribution of this sample on marital status is representative of the general population of Alberta farm women, the distribution of marital status for all Alberta farm women based on the Statistics Canada 1981 census data is presented in Table 6.

Table 6
Distribution of Alberta Farm Women 20 Years and Over
by Marital Status

Marital Status	Frequency	Percentage
Single (never married)	10,355	7.1
Marricd	121,265	83.7
Widowed	11,070	7.6
Divorced	2,225	1.6
Total	144,915	100.0

Source: Census of Canada (1981). Age, Sex and Marital Status
Table 5, pp. 5-17.

The most obvious difference between these two samples is the lack of single women in the sample group. A significant portion of this difference can be accounted for by the fact that this study dealt with a selection of only farm women who were either married or living in common-law arrangement.

Ownership

When respondents were asked who had ownership of the family farm, 27.2 percent of the women reported that they had no ownership, indicating that farm husbands had sole or individual ownership. Seventy percent reported that they had some form of joint ownership or partnership, and only 2.8 percent of the women reported that they had sole or individual ownership of their farms. Table 7 presents a more detailed breakdown of farm ownership.

Table 7
Distribution by Farm Land Ownership of Study Sample

Types of Ownership	Frequency	Percentage
No Ownership	86	27.2
Sole Ownership	9	2.8
Joint Ownership (c.g. by husband and wife)	114	36.1
Individual and Joint Ownership	30	9.5
Partnership with Written Agreement	19	6.0
Partnership with Unwritten Agreement	22	7.0
Family Corporation	36	11.4
Total	316	100.0

Interestingly, nine women reported sole or individual ownership. This is exactly the number of women who reported being widowed, separated or divorced.

Income

Women were also asked to report the amount of their personal off-farm income for the previous year (1984). Reported off-farm income ranged from nil to \$36,624, with a mean of \$9,191.56. This figure compares significantly to the mean off-farm income of Alberta farm women in 1985, which was \$8,949 (Statistics Canada census data, 1986).

Summary

Overall, a wide range of Alberta farm women were represented in the study sample in terms of different age groups (ranging from 20 to 76) and levels of schooling (ranging from some elementary schooling to university graduate degrees).

When compared with the figures given by Statistics Canada 1986, the overall study sample of women were somewhat younger and better educated than the general population of Alberta farm women. This difference, however, can be anticipated in mail-out survey research (Billman, 1978) and does not appear to be large enough to invalidate the results.

A significant number of farm women in the study sample (315) had spouses, except for the nine women who were either separated, widowed or divorced. This is an indication that this study dealt with a respectable representation of farm women who were either married or living in a common-law arrangement. Moreover, very few of the farm women had sole ownership over farm lands. The women who did own farm lands were those without spouses. This is an indication of the traditional practices which still exist in rural farming areas, which give more rights over ownership of farm lands to men than to women (Salamon & Keim, 1979). The mean off-farm income earned by the farm women in this study, only \$9,191.56, was low when compared to the mean off-farm income of their male counterparts which was \$18,467.32. This indicates that farm women are paid lower wages than farm men when employed off the farm, predominantly due to traditional practices which require men rather than women to have paid jobs (Anker & Heim, 1986).

In comparison to the figures provided by Statistics Canada 1986 for the general population of Alberta farm women, the mean off-farm income of the women in this study was significant. The marital status of the women in this study sample over-represents Statistics Canada's (1981) report on the marital status of the general population of Alberta farm women (96.4% and 83.7%, respectively).

Mastery

In order to determine farm women's scores on the Mastery Scale, women's scores on the seven 5-point Likert scales were summed and divided by seven to produce mean mastery scores for each woman. Thus, mean scores on the Mastery Scale potentially range from one to five. In fact, respondents' scores ranged from one to five. The distribution was slightly negatively skewed with a mean of 3.87 and a median of 3.86. Table 8 illustrates the distribution of mastery scores which was divided into low and high categories.

Table 8
Distribution of Scores on the Mastery Scale
from Low Mastery to High Mastery

	Score Range	Frequency	Percentage
Low	1.00 - 3.85	159	50.3
High	3.86 - 5.00	157	49.7
Total		316	100.0

Although these mastery scores appear to be quite high, it is not possible to determine whether the study sample scores are atypically high, average, or even low, since there was no norm available for the Pearlin and Schooler scale (1978).

Relationship between the Demographic Variables and Mastery

In order to determine whether relationships existed between the demographic variables of interest and mastery, a Pearson product-moment correlation coefficient was computed for each relationship to test for linear relationships. Additionally, for those demographic variables where a curvilinear relationship with mastery was suggested by the literature, a curvilinear regression analysis was conducted.

Mastery and Age

In order to determine whether there is a relationship between a farm woman's age and the degree of mastery which she possesses, a Pearson product-moment correlation coefficient was computed. No evidence of a linear relationship between these two variables was found ($r[326] = -.05, ns$).

Based on the literature, one might expect levels of mastery to be high in early adulthood due to physical abilities and drop-off during the middle years. Moreover, levels of mastery might increase again in later years because of greater experience and wisdom that comes with age. In order to test for the possibility of this curvilinear relationship, a curvilinear regression analysis testing for a second-order model or a quadratic trend was conducted. No curvilinear relationship was found ($\beta = .325, t < 1$).

Further visual examination of a scatter plot of the two variables revealed no relationship between mastery and age.

Mastery and Education

In order to determine whether there is a relationship between a farm woman's level of education and the degree of mastery which she possesses, a Pearson product-moment correlation coefficient was computed. Results indicated a statistically significant positive relationship ($r[322] = .12, p < .05$); that is, the higher a farm woman's level of education, the greater the sense of mastery which she possesses.

Mastery and Income

In order to determine whether a relationship exists between a farm woman's level of income and the degree of mastery which she possesses, a Pearson product-moment correlation coefficient was computed. The result indicated no relationship between the two variables ($r[107] = .076, ns$), exhibiting no relation between a farm woman's level of income and her level of mastery.

Mastery and Ownership

In order to determine that there exists a relationship between farm land ownership and a farm woman's sense of mastery, farm women were classified into one of three categories of farm ownership, namely, no ownership, joint ownership and sole ownership, and into

one of two categories of mastery (high or low mastery, determined by a median split).

A chi-square test of association was carried out. The results indicated no significant association between the two variables, chi-square < 1 (see Table 9 for cross-tabulation data).

Table 9
Percentage of Farm Women Scoring High or Low
on the Mastery Scale for Each Type of Ownership

	No Ownership	Joint Ownership	Sole Ownership	Row Total
Low Mastery	42 26.4 48.8	113 71.1 51.1	4 2.5 44.4	159 . 50.3
High Mastery	44 28.0 51.2	108 68.8 48.9	5 3.2 55.6	157 49.7
Column Total	86	221	9	316
Percentage	27.2	70.0	2.8	100.0

Summary of Findings

The results of the analyses conducted to determine which demographic variables were related to Alberta farm women's level of mastery revealed that only education was statistically significantly related to mastery. Implications of this relationship are discussed in the following chapter.

CHAPTER V
DISCUSSION AND SUMMARY OF RESULTS

The purpose of this study was to determine what demographic factors predict Alberta farm women's sense of mastery. Discussion on the major findings and conclusions based on the findings are presented in this chapter. Implications of the findings, as well as some suggestions for future research are also addressed.

Education and Mastery

Based on the findings for the sample of women in this study, only education appeared to be associated with sense of mastery among Alberta farm women. The finding on education was consistent with the review of the literature, which stated that one's level of education has a direct relationship with one's sense of mastery. For example, Berkowitz and Carpner (1978), in their study of farm families, mentioned that farm family decisions are affected by the personality characteristics of the people involved, hence human resources (skills, knowledge) are a powerful predictor of the goals which a particular farm family could achieve. Cebotarev (1982) found that females with formal education worked primarily in education, health and clerical fields. Females without formal

education worked predominantly in the personal services, i.e. shops and bars.

Farm women with a higher level of education enjoy greater access to the job market than do uneducated women and their contribution of income to the farm operation is more substantial (Rosenfeld, 1985). These factors may contribute to a higher level of mastery.

Age and Mastery

The relationship between age and mastery was not as anticipated. It was expected that different age groups might have some advantages over others, and that these advantages might increase their sense of mastery. Possible reasons provided by some researchers seem to explain why age does not have a significant association with farm women's sense of mastery.

Jones and Rosenfeld's (1981) multivariate analysis of farm women's involvement in tasks essentially explained very little variance (.17). They found that women's participation in farm tasks, irrespective of their age, was negatively related to the value of the operation, and to enterprises with the higher percentage sales from crops.

With reference to the younger generation, Graff (1982) professed that they participate in both farm and household activities to a lesser extent than did farm women at an equivalent life cycle stage four decades ago.

Therefore, if there is a direct relationship between decreased involvement in economic production (farm work) and decreased power, prestige and rights, the position of these women would decline (Graff, 1982), resulting also in a low sense of mastery.

With reference to the older generation it was suggested by Gutman (1985) that active mastery increases with age, but Gutman was convinced that the source of (or reason for) the increased mastery was a matter of speculation. According to Gutman, research to specify the sources of change need to be conducted. If the question - Is there an increase in active mastery after mid-life? - is to be answered, according to Gutman, individual attitudes must be assessed and studies on women who had never had children must also be considered.

Income and Mastery

The findings on income were also inconsistent with what was anticipated based on the review of the literature. It was expected that farm women with more off-farm income would have a higher sense of mastery, but no relationship was found between off-farm income and mastery. Cebotarev (1982) mentioned that the income which farm women earn from off-farm employment was usually absorbed into the farm operation as a direct subsidy, and therefore did not contribute to a sense of self-reliance, nor did it give direct control over either personal or

farm finances. Other reasons for this phenomenon were advanced by various researchers.

Graff (1982) remarked that while younger women appear to be entering the off-farm paid labour force in greater proportions than farm women did in the past, the types of jobs currently open to women remain low in prestige, in potential for advancement, as well as in economic rewards. Respectively, therefore, the status, power and image assigned to farm women on the basis of their economic work were low, thus not contributing to a higher sense of mastery.

Farm Land Ownership and Mastery

Farm land ownership was also not associated with farm women's sense of mastery. The major reason for this finding may be gender-based. Sex plays a major role in traditional operation of the farm. A woman may own farm land, nevertheless she may give the controlling power of that land to her spouse. According to Salamon and Keim (1979), this is typical of farm families. It is possible that the husbands have major input, so that decisions are influenced or even made by husbands. Thus, while a woman may own the land, she may have little or no control over her own lands. It may be assumed, therefore, that land ownership would have very little or nothing to do with a farm woman's sense of mastery.

Conclusion

In conclusion, it has been demonstrated by the analysis carried out, based on the sample of women in this study, that education is the only demographic factor which is significantly related to farm women's sense of mastery. This new understanding, therefore, would be helpful in planning programs to assist women in farming communities in developing and improving their self-esteem and their sense of mastery.

Implications of the Study

Since a farm woman's sense of mastery is significantly and positively related to her level of education, emphasis needs to be placed on raising the level of education of farm women. Improvement of educational level should raise the farm woman's sense of mastery, or the sense of being in control of her life chances. However, there exists a need in this area for future research that would test the causal order of these two variables.

Educational programs and the means of implementing them must be planned in such a way that they include even those farm women who, because of time constraints, find it very difficult or even impossible to enter educational institutions away from their farming communities. The importance of time as a resource has been ascertained

by many researchers (Keating & Doherty, 1985; Scholl, 1983; Fink, 1985; Smith, 1987). These researchers have found that farm women lack time due to the many and sometimes conflicting demands and obligations placed upon them. These numerous and differing roles leave farm women very little time for their own personal growth through further education pursuits. In this respect, Keating and Doherty (1985) suggested that support services should be made available to women in order to free them from many of their everyday obligations and duties. This may be one major way to help farm women find the time for more personal growth and educational activities--significantly raising their sense of mastery.

Suggestions for Future Research

This study looked at some demographic factors as determinants of mastery for Alberta grain and oilseed farm women; however, only education seems to be associated with these women's sense of mastery. The implications of these results have been addressed earlier in this chapter. It is appropriate here to look at some areas requiring future research.

More work is needed in developing other useful definitions and techniques for measuring sense of mastery, particularly concerning rural farm women. Rural farm women have a different goal in life. Consideration must be paid to the closeness and unity of farm families, for

example, living and working together, communal living (life of sharing) with their neighbours.

Of particular importance is the farm woman's traditional role in rural community life. Neth (1988) comments: "Through their informal community work in gender, family, and neighbourhood networks, women have spun and woven the social fabric of rural community life and created a sense of sharing and mutuality" (p. 5). These are major differences that exist between urban women and rural farm women.

Apart from developing useful definitions of mastery, there is a need for more research on psychological resources. Keating (1987) suggested that attention to psychological resources is particularly important in helping one to see life as being more controllable.

Another recommendation for future research is the extension of this research to other types of farm operators. The current study dealt only with a selected sample of grain and oilseed farmers, limiting the applicability of the findings to other types of farm operators. It is possible that the demographic factors measured here might be significant for other types of farmers.

Finally, there is a need for research in the area of issues pertaining to women in developing countries. The majority of the literature reports that such women

lack power because of their economic and political disadvantages, as well as in husband-wife relationships (Khajapeer, 1987; Ocloo, 1987; Mbura, 1986). It is therefore recommended that future research focus on the feelings, perceptions and realizations of rural farm women in both developing and developed countries, with specific reference placed on how they live their lives as well as their life expectations.

CHAPTER VI
RURAL WOMEN IN DEVELOPING COUNTRIES

My professional concern has always been to help rural women in Sierra Leone change their attitudes toward life. They generally have a low self-esteem. Those of us working with such women have tried to help them develop some control over their lives. We have tried different methods such as income-generating activities (making and selling of gara cloth; making and selling of home-made soap) to help them become economically independent. Many of these approaches did not work well because of the technology involved, especially where the goods are to be produced in large quantities. We later came to realize that knowledge of the technology involved in producing these goods was necessary. But we found it difficult to impart such knowledge because of the high level of illiteracy among these women.

So, the question that was continually asked was: How could we help women become independent and self-sufficient and therefore gain control over their lives?

These questions guided a lot of my own reading and ultimate selection of a topic for my thesis.

The Position of Rural Women in Developing Countries

Rural women world-wide are largely engaged in farming and share similar problems. Understanding of these problems in one part of the world will serve to help in the understanding of similar situations in other parts of the world.

According to Norman (1983), women comprise half of the world's population, perform two-thirds of the world's working hours, receive one-third of the world's paid income, and own only one-hundredth of the world's property. Women still occupy the largest portion of the world's over-burdened sector with non-economic activities and they still represent the largest group of unemployed in the economic sector.

Rural women provide 70 to 80 percent of the agricultural labour in the farming sector (Nikoi, 1987). Indeed, they provide the labour for economic farm activities such as cash cropping and animal care. Furthermore, they are responsible for all domestic food preparation -- they weed, harvest, process, store and prepare it. Women also carry water and firewood, prepare meals and look after the home. They clearly bear the brunt of the load in the rural family. Moreover, women are solely responsible for child care and all domestic activities in the home. Given the time involved with all

these activities, women are left with no leisure time and very little opportunity to improve their lot.

To add to this, rural women are held in very low esteem. They are the least recognized in society as far as their roles are concerned. Prestige, attention and investment are credited overwhelmingly to men's work--the production of export crops and food grains for which women are most often the labourers.

Traditionally, women in developing countries have little decision-making power. They are expected to be subservient to their husbands in all matters affecting the family. They are essentially powerless. In most developing countries, women are absent from the foreground in development, fundamentally dominating the background. They are generally considered backward and powerless because of a lack of the components which permit power and control over one's life. Chambers (1983) discusses rural women as people who are a poor and deprived class within a class. He contends that people who are powerless cannot effectively control their lives. Since women in developing countries fall into this category, they would therefore be regarded as having little or no control to influence situations in their lives.

Because rural women are never at the forefront of development, development efforts on their behalf are virtually missing, often they are pushed aside (Fredette, 1985). Women, themselves, have little time or inclination

to initiate progress toward their own development. Many factors contribute to the lack of progress toward development. Therefore, issues which can be considered as fundamental to development should be those that affect the majority of women in each developing country. When one addresses this situation, especially in Africa, the two issues which follow attract the majority attention in terms of development:

Illiteracy

There is a high incidence of illiteracy in almost all developing countries (Basu, 1977). Western education has not yet got hold of the larger population in the developing world. The largest group in this class comprises rural women (Mbura, 1986). Efforts have been made by governments, church organizations and individuals of developing countries to increase the scope of education; nevertheless, the percentage of the educated population, in the strict sense of the word, remains far below that of the uneducated or illiterate population.

Foreign agencies have helped developing countries by providing these countries with literacy programs. A major problem is that more men than women have benefitted from the programs. As an indication of this, Fredette states, "When training for agricultural work done by women is offered, men often end up with the training and women with the work" (p. 5). Women are not likely to take part

in such programs because of suppression from their spouses, lack of time, and family commitment (Fredette, 1985; Reddy, 1986). Similarly, Clark (1985) mentions that while literacy programs have been carried out in developing countries to improve the status of rural women, not much has been accomplished. The implication is that even though rural women may be ready to change, traditional practices which are prevalent in rural societies render them less able to do so. A recent illiteracy rate report by World Media (1990) for developing countries shows that women are still in the majority of illiterates. Some of the countries in West Africa mentioned are:

	<u>Male</u>	<u>Female</u>
Liberia	52.7%	77.2%
Nigeria	46.2%	68.5%
Ghana	35.9%	57.2%

In Sierra Leone, with a population of little over 4.5 million, according to 1986 population census, the illiteracy rate for rural areas was between 78 and 80 percent. The greater part of this group (75%) were women (UNICEF Situation Analysis, 1988). This is a situation that definitely calls for concern.

Since education has been proven to be a major and fruitful step toward development, as well as having control over one's life, the lack of it has been a major setback for rural women in developing countries (Mbura,

1986; Jacquette, 1988; Reddy, 1986; Kinshaga, 1984; Hamadache & Martin, 1986).

The figures on the illiteracy rate indicate the importance of paying attention to women's literacy. Basu (1987) is convinced that literacy will help rural women become aware of their rights, to participate freely in decision making in family affairs, as well as to make successful decisions for the well being of the family. Being able to do so, Basu says, would be a major step toward development.

Additionally, the high level of illiteracy for rural women is due to many other factors:

1. Cultural patterns: Most rural families believe that formal education is not meant for women. They see no reason to keep their girls in school until completion. As farmers, the rural men expect and demand continuity of work on the farm. Education for young women means losing control of their girls who are major assets in the home as far as domestic and farm labour is concerned.
2. Parental education: Because rural women are illiterate, they therefore do not see the need for their female children to be educated. They are the traditional socializers of their daughters, and sending them away to school would lessen their influence.

Poverty undermines the living standard of most families. This hinders them from coping with the high cost of education. For these reasons, most rural women prefer not to undertake any initiative in their daughters' education.

3. Family size: In developing countries, particularly in Africa, the size of a family may not only be determined by the effect of polygamous marriage practices, but by the extended family system where uncles, aunts, brothers, sisters, mothers and fathers all live under one roof. In a situation like this, feeding instead of education becomes a priority. The work required for this process demands that all available women be involved.

Fertility

African women continue to give birth too often, too young, and too old. Most of them produce their first babies around the age of 15 years and continue having children every year or two until they reach menopause.

The world's poorest countries, according to UNICEF (1988), account for about 90 percent of the 500,000 women who die each year during childbirth from complications relating to malnutrition. Because rural women are mostly malnourished, they give birth to malnourished children. Many of these children do not live to age five. Women very often handle such problems alone, because men migrate

to urban areas in search of jobs (Schumacher, 1978). The men visit home infrequently and the economic benefits of their jobs are shared sparingly with the women labouring at home. The women have increasingly become the sole supporters of themselves and their children, with very little economic resources. The physical needs of children are barely met because of the low income levels of the mothers (Kwawu, 1983).

Clark (1985) believes that women have little control over their own labour. They are obliged to do farm work for their spouses whenever they are called upon. They are also obliged to give whatever income they earn, from domestic food production, to their husbands. These rural women do not own lands, thus it is believed that whatever proceeds come from farm lands should go to the men. Rural women, therefore, have no power over the use of money and they, indeed, lack control over their lives.

It should be noted that it is the lack of effective education that gives rise to the problems of rural women in the developing world. If education programs are properly planned and carefully implemented on the issues highlighted, the development of the population of rural women in the developing world can be accomplished.

For some time now, the interest of the world has been focused on "women in development." Any study that leads toward the concept of control over one's destiny

will be considered important and worth pursuing. If effective strategies are to be planned toward the solution of rural women's problems, knowledge of what causes the problems is very important.

The concept of mastery, which is about how people perceive themselves to be in control of their life-chances seems to provide the key to answering a lot of the questions pertaining to rural women in developing countries. This concept features heavily in studies such as Pearlin and Schooler's (1978) "Structure of Coping," Keating's (1987) "Reducing Stress of Farm Men and Women," and Keating and Doherty's (1985) study of Alberta grain and oilseed farmers. This is why these studies and others of their kind were of special interest to me.

This present study dealt with two major questions about mastery. These were:

1. What factors are related to a sense of mastery of Alberta farm women; and
2. How are the factors relevant for work with rural farm women in Sierra Leone specifically, and in developing countries generally?

Researchers (Pearlin & Schooler) view mastery as a psychological resource for coping with stress. In this context, mastery is defined and measured in terms of the degree to which people feel or perceive themselves as being in control of their life chances as opposed to being fatalistically ruled.

This way of looking at mastery implies that a person who is highly stressed (or suffering from any other debilitating condition such as poverty or underdevelopment) is one who also feels or perceives a lack in her ability to be a master of her own destiny or fate. Such a person is said to be fatalistically ruled. She can also be said to be lacking in personal competence or that she exhibits an external locus of control.

If we know the factors which are related to mastery, can such factors be manipulated to effect the development (economic, social and political) of people? for a researcher with a Third World perspective, a related question is: Is raising the sense of mastery of rural women in Third World countries (known to be poor, overworked and underdeveloped) the same thing as empowering such women to take control of their own personal economic and socio-political development? This is the case and that was why an effort was made (implicitly or explicitly) to draw parallels between the concept of mastery (as discussed in the literature on stress with Alberta farm women) and the concept of empowerment (as discussed in the literature concerning women in development).

The underlying argument is this: Just as stress affects farm women in Alberta, so is poverty or underdevelopment a defining factor of rural women in Third World countries.

Pearlin and Schooler suggested a number of factors which can influence mastery. Keating and Doherty also suggested similar factors as predictors of mastery. After combining these two suggestions, the factors which were selected for inclusion in this study were age, education, off-farm income, and ownership.

To determine if these factors can influence mastery, a secondary analysis of Keating and Doherty's data was carried out. The result of this analysis revealed that only education has a significant relationship with mastery.

If such is the case, then it is possible to develop a process through which one brings together the notion of formal and informal educational techniques which will assist women in the developing world to develop a stronger sense of control over their lives and the lives of their families.

The following generalizations can be used to direct research and programs in Sierra Leone.

Literacy is the key to all education, therefore, the extension of literacy programs to all rural women in Sierra Leone would contribute to the higher level of mastery.

Literacy taught by relating it to tasks normally the responsibility of women increase their sense of mastery.

Once a nominal level of literacy is achieved, other means of improving self-worth can be introduced, such as community organization for community betterment, income generation activities, and money management skills. In this way, women take over the control of their lives and the life of the community, thus providing them with a better sense of their own worth and of mastery over their own lives.

This is especially important for the least developed countries, where a vast majority of the population is made up of illiterate women. In fact, Tadesse (1982) is of the opinion that the economic backwardness of developing countries has to do with the fact that the vast majority of their rural population, especially women, are illiterate. Tadesse therefore concludes that positive changes in the developmental efforts of these poor countries would depend upon improving the educational training -- formal or informal -- of rural farm women.

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APPENDIX A
LETTER OF INTRODUCTION



Dear Farm Owner:

Although everyone seems to think they know a lot about the lives of farmers in Alberta, there is little solid information from farmers themselves.

We would like to know more about what farming is like for you and your spouse: the work that you do, the time that you spend, the stress you experience. Your input will be invaluable in helping us understand the farming life from the perspective of people who are living it.

This study is being funded by Farming for the Future, Alberta Agriculture and is being carried out by people from the Faculty of Home Economics at the University of Alberta. Your name will not appear on any part of this study; therefore your responses will be anonymous. In no way will you be identified.

We timed this study to arrive after harvest and fall work have been completed. If you have already completed this survey, please return it in the enclosed envelope. If you have any comments or questions about the study, please write to Farming for the Future, 801 General Services Building, University of Alberta, Edmonton, T6G 2H1 or telephone Maryanne Doherty at 432-3653 or Norah Keating at 432-4191. We anxiously await your answers and thank you for taking part in this important study.

Sincerely,

Maryanne Doherty, Ph.D.
Administrative Professional
Officer
Faculty of Home Economics

Norah Keating, Ph.D.
Associate Professor
Department of Family Studies
Faculty of Home Economics

APPENDIX B
QUESTIONNAIRE INSTRUCTIONS

INSTRUCTIONS

This study has three sections and each one is a different colour. The YELLOW section is for you, the farm owner. It has general questions about your farm. It should take approximately 15 minutes to complete.

The BLUE section is for the male (husband) involved in the farm operation. If there is no male, please return this part unanswered.

The PINK section is to be answered by the female (wife) involved in the farm operation. If there is no female, please return this part unanswered.

The pink and blue sections are identical. They contain questions about how your time is used, paid and unpaid work off the farm, and feelings about various matters. It should take approximately 35 minutes to complete the BLUE or PINK section.

When you have completed the survey, please place all three sections in the self-addressed, stamped envelope and return before February 21, 1985. If you would like to know the results of this study, please fill in the card and send it back.

APPENDIX C
QUESTIONNAIRE

The owner of the farm should answer this section.

A STUDY OF ALBERTA FARMERS

We would like to know some general information about your farm. Please answer the following questions.

1. How many acres are there in your farm? Please fill out the chart below.

Acres	Acres Hay and Pasture	Acres Cropped	Acres Summerfallow	Acres Other	Total Acres
Owned	_____	_____	_____	_____	_____
Rented by you	_____	_____	_____	_____	_____
Rented out to other(s)	_____	_____	_____	_____	_____

2. Which of the following best describes your farm?
Please check (✓) only one.

- _____ 1 one grain or oilseed crop
 _____ 2 more than one grain or oilseed crop
 _____ 3 one grain or oilseed and livestock
 _____ 4 more than one grain or oilseed and livestock
 _____ 5 other (Please specify) _____

3. How would you describe the legal ownership arrangement of your farm? Please check (✓) the most accurate one.

- _____ 1 individual ownership (male)
 _____ 2 individual ownership (female)
 _____ 3 joint ownership by husband and wife
 _____ 4 individual and joint ownership
 _____ 5 partnership with written agreement
 _____ 6 partnership with unwritten agreement
 _____ 7 family corporation
 _____ 8 other corporation

4. Do you live on your farm?
 _____ 1 yes _____ 2 no

5. What was your total gross value of agriculture products sold from January 1 to December 31, 1983?

\$ _____

6. What was your net farm income from January 1 to December 31, 1983?

\$ _____

7. What was your total farm debt on December 31, 1983?

\$ _____

8. How stressed do you feel by your farm debt? Please circle your response.

No Stress					A Great Deal of Stress	No Farm Debt
1	2	3	4	5	1	0

9. If you could not obtain operating financing to cope with your debt, which of the following would you do? Please circle your response for each item.

	Yes	No	Not Applicable 0
Consolidate loans	1	2	0
Remortgage	1	2	0
Sell livestock	1	2	0
Sell machinery	1	2	0
Sell land	1	2	0
Lease or rent your land	1	2	0
Take an off-farm job (you or spouse)	1	2	0
Other (please specify)	1	2	0

10. We would like to know who works on your farm and in your household.

- I. A. Start with yourself.
- B. Circle the appropriate sex.
- C. Give your age in years.
- D. Of all the work done on your farm, write the percentage that you do.
- E. Circle whether you are paid.
- F. Of all the work done in the household, write the percentage that you do.
- G. Circle whether you are paid.

II. List the members of your family who work on your farm or in your household in column A, give their relationship to you and fill in columns B through G for each person.

III. List all other people who work on your farm or in your household in column A and fill in columns B through G for each person.

A. Relationship to Yourself	B.		C. Age	D. % of Total FARM Work Done	E.		F. % of Total HOUSEHOLD Work Done	G.	
	Sex Male-Female				Wages Paid for FARM Work Yes - No			Wages Paid for HOUSEHOLD Work Yes - No	
SELF	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
_____	M - F		___ yrs	___ %	Y - N		___ %	Y - N	
(use reverse if necessary)			Total 100 %				Total 100 %		

The male (husband) of the farm operation should answer this section.

A STUDY OF ALBERTA FARMERS

1. Please estimate the total number of hours per month you spent on the following farm and household activities in 1983.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
a) Field Work (including driving field machinery, driving truck, bringing meals to field)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
b) Secretarial/Bookkeeper (including correspondence, keeping records and filing, bookkeeping, preparing income tax, banking)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
c) Management (including supervising farm help, discussing and making decisions, purchasing items, marketing products)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
d) Building and Property Maintenance (including building maintenance, fencing, related work, weed spraying)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
e) Equipment Maintenance (including repairing, cleaning, fueling)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs

FARM WORK

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
f) Chores (including feeding and watering livestock, performing milking chores, cleaning barns, helping with farm animals)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
g) Other Farm Related Work (including running errands, travelling time)	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs

HOUSEHOLD WORK

- a) Taking Care of People
(including caring for children, transporting children, caring for other family member(s))
- b) Management
(including supervising hired help, purchasing items, discussing and making decisions, entertaining visitors)
- c) Home Maintenance
(including repairing, cleaning, doing laundry, cooking)
- d) Production
(including gardening, preserving food, doing home sewing)

2. Do any of the following prevent you from doing <u>farm</u> work?	Yes	No
Lack of physical strength	1	2
Poor health	1	2
Lack of confidence	1	2
Lack of skill or knowledge	1	2
Lack of interest	1	2
Lack of time	1	2
Off-farm paid work	1	2
Off-farm unpaid work	1	2
Other (please specify)	1	2

3. Do any of the following prevent you from doing <u>household</u> work?	Yes	No
Lack of physical strength	1	2
Poor health	1	2
Lack of confidence	1	2
Lack of skill or knowledge	1	2
Lack of interest	1	2
Lack of time	1	2
Off-farm paid work	1	2
Off-farm unpaid work	1	2
Other (please specify)	1	2

We would like to know your opinions about your farm work. For each question please circle the number that best describes how you feel. (If you are NOT involved in farm work, please go to question 7).

4. How important to you is your farm work?
- | | | | | |
|-------------|---|---|---|-----------|
| 1 | 2 | 3 | 4 | 5 |
| | | | | Extremely |
| Unimportant | | | | Important |
5. How much personal satisfaction do you receive from your farm work?
- | | | | | |
|--------------|---|---|---|-----------------|
| 1 | 2 | 3 | 4 | 5 |
| Very Little | | | | A Great Deal |
| Satisfaction | | | | of Satisfaction |
6. If there were no economic necessity, would you still want to do farm work?
- | | |
|-----|----|
| 1 | 2 |
| Yes | No |

The questions that follow are about your health. Please circle the number that best describes how often you have had each of the following experiences during the past year.

	Very				
	Often 1	2	Sometimes 3	4	Never 5
30. Have you been taking prescription or nonprescription medication?	1	2	3	4	5
31. Have illness or accidents kept you from doing things you need or want to do?	1	2	3	4	5
32. How frequently have you visited the doctor?	1	2	3	4	5
33. Have you any trouble getting to sleep or staying asleep?	1	2	3	4	5
34. Have you been bothered by shortness of breath when you were not exercising or working hard?	1	2	3	4	5
35. Have you had fainting spells?	1	2	3	4	5
36. Have you been bothered by nervousness (irritable, fidgety, tense)?	1	2	3	4	5
37. Have you been so restless that you cannot sit still for long?	1	2	3	4	5
38. Have you sometimes felt that people are against you for no good reason?	1	2	3	4	5
39. Have you had worries that get you down physically?	1	2	3	4	5
40. Have you been worried by loneliness?	1	2	3	4	5

For each of the following questions please circle the answer that best describes your feelings.

	Strongly Agree		Strongly Disagree		
	1	2	3	4	5
41. I have little control over the things that happen to me.	1	2	3	4	5
42. There is really no way I can solve some of the problems I have.	1	2	3	4	5
43. There is little I can do to change many of the important things in my life.	1	2	3	4	5
44. I often feel helpless in dealing with problems of life.	1	2	3	4	5
45. Sometimes I feel that I'm being pushed around in life.	1	2	3	4	5
46. What happens to me in the future mostly depends on me.	1	2	3	4	5
47. I can do just about anything I set my mind to.	1	2	3	4	5

In this section are questions about your marriage. (If you are NOT married, please go to question 53.)

	Very Unsatisfied				Very Satisfied	Not Applicable
	1	2	3	4	5	0
48. How satisfied are you with the amount of support or understanding your spouse gives you in regard to your						
farm work	1	2	3	4	5	0
household work	1	2	3	4	5	0
off-farm paid work	1	2	3	4	5	0
volunteer work	1	2	3	4	5	0
49. If your spouse objected strongly, would you still want to be involved in your	Yes	No				Not Applicable
farm work	1	2				0
household work	1	2				0
off-farm paid work	1	2				0
volunteer work	1	2				0
50. Overall, how satisfied are you with the amount of work your spouse contributes to						
the farm	1	2	3	4	5	0
the household	1	2	3	4	5	0
51. Overall, how satisfied are you with the way your spouse helps you cope with your tensions?						
Very Unsatisfied	1	2	3	4	Very Satisfied	Not Applicable
					5	0
52. Overall how satisfied are you with your marriage?						
Very Unsatisfied	1	2	3	4	Very Satisfied	Not Applicable
					5	0

And these questions ask about your friends.

53. Do you see your friends as often as you would like?	1	2				
Yes		No				
54. Overall, how satisfied are you with your friendships?						
Very Unsatisfied	1	2	3	4	Very Satisfied	Not Applicable
					5	0
55. Overall how satisfied are you with the way your friends help you cope with your tensions?						
Very Unsatisfied	1	2	3	4	Very Satisfied	Not Applicable
					5	0

The following questions are about farming in general.

56. Did you grow up on a farm?

_____ Yes
 _____ No

If no, at what age did you begin farming? _____ years of age.

57. How satisfied are you with farming as a way of life?

Very Unsatisfied					Very Satisfied
1	2	3	4		5

58. How satisfied are you with farming as a way to make a living?

Very Unsatisfied					Very Satisfied
1	2	3	4		5

Finally, we would like some information about you.

59. How old are you? _____ years

60. What is the highest level of education you have completed?

_____ elementary
 _____ junior high
 _____ senior high
 _____ technical/vocational training
 _____ university degree (undergraduate)
 _____ university degree (graduate)

61. What is your current marital status?

_____ married
 _____ never married
 _____ common law
 _____ widowed
 _____ separated
 _____ divorced

62. How many children do you have? Please include children from second and subsequent marriages if applicable.

_____ children

63. Please complete the following information about your children.

Child	Sex		Age	Living at Home	
	Male-Female			Yes	No
	M	F		Y	N
1	M	F	_____	Y	N
2	M	F	_____	Y	N
3	M	F	_____	Y	N
4	M	F	_____	Y	N
5	M	F	_____	Y	N
6	M	F	_____	Y	N
7	M	F	_____	Y	N
8	M	F	_____	Y	N
9	M	F	_____	Y	N
10	M	F	_____	Y	N

64. Including yourself, how many people are living in your home? _____ people

65. Aside from your spouse and children, does anyone else live in your home?

_____ Yes _____ No

66. If yes, please list the people and their relationship to you (eg. mother-in-law, brother, hired helper).

THANK YOU FOR YOUR ASSISTANCE AND COOPERATION!

(Please use this space for additional comments).

FARM WORK

f) Chores
(Including feeding and watering livestock, performing milking chores, cleaning barns, helping with farm animals)

g) Other Farm Related Work
(Including running errands, travelling time)

HOUSEHOLD WORK

a) Taking Care of People
(Including caring for children, transporting children, caring for other family member(s))

b) Management
(Including supervising hired help, purchasing items, discussing and making decisions, entertaining visitors)

c) Home Maintenance
(Including repairing, cleaning, doing laundry, cooking)

d) Production
(Including gardening, preserving food, doing home sewing)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
f) Chores	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
g) Other Farm Related Work	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
a) Taking Care of People	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
b) Management	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
c) Home Maintenance	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
d) Production	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs

2. Do any of the following prevent you from doing <u>farm</u> work?	Yes	No
Lack of physical strength	1	2
Poor health	1	2
Lack of confidence	1	2
Lack of skill or knowledge	1	2
Lack of interest	1	2
Lack of time	1	2
Off-farm paid work	1	2
Off-farm unpaid work	1	2
Other (please specify)	1	2

3. Do any of the following prevent you from doing <u>household</u> work?	Yes	No
Lack of physical strength	1	2
Poor health	1	2
Lack of confidence	1	2
Lack of skill or knowledge	1	2
Lack of interest	1	2
Lack of time	1	2
Off-farm paid work	1	2
Off-farm unpaid work	1	2
Other (please specify)	1	2

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- | | | | | |
|-------------|---|---|---|------------------------|
| 1 | 2 | 3 | 4 | 5 |
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Important |
| Unimportant | | | | |
5. How much personal satisfaction do you receive from your farm work?
- | | | | | |
|-----------------------------|---|---|---|---------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| Very Little
Satisfaction | | | | A Great Deal
of Satisfaction |
6. If there were no economic necessity, would you still want to do farm work?
- | | |
|-----|----|
| 1 | 2 |
| Yes | No |

The questions that follow are about your health. Please circle the number that best describes how often you have had each of the following experiences during the past year.

	Very Often		Sometimes		Never
	1	2	3	4	5
30. Have you been taking prescription or nonprescription medication?	1	2	3	4	5
31. Have illness or accidents kept you from doing things you need or want to do?	1	2	3	4	5
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volunteer work	1	2	3	4	5	0
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4	M	F	_____	Y	N
5	M	F	_____	Y	N
6	M	F	_____	Y	N
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8	M	F	_____	Y	N
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