# ISSUES AND PERSPECTIVES IN TECHNOLOGY TRANSFER FOR FOOD SECURITY IN THE PRESENT AND FUTURE

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# POTENTIALS AND CONSTRAINTS OF WOMEN PARTICIPATION IN FARMING IN A PREDOMINANTLY MUSLIM COMMUNITY: A CASE STUDY IN SOKOTO STATE, NIGERIA

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Although the contributions of women to farming are acknowledged elsewhere, they have ABSTRACT not been considered as important source of farm labour in muslim areas of northern Nigeria, presumably because of the practice of "Kulle" (or seclusion of married women). This has led to the designing of agricultural extension strategies, input distribution schemes, credit facilities, and training policies, that are primarily directed at men, to the exclusion of women. Using data collected from women farmers in the Gusau Local Government Area of Sokoto State, Nigeria, this paper demonstrates that women, especially those that are fairly old but still able-bodied, participate actively in farming in the rural areas. It was therefore suggested that the "sechision hypothesis" be revised such that women are treated as vital change agents in planning agricultural development strategies. A mumber of other constraints to women participation in farming were also identified and their implications for policy, research, and extension strategies highlighted.

# 1.0 Introduction

Women appear to have received enormous attention in the recent past. On a global basis, the year 1975 was declared International Women's Year, while the period 1975-1985 was declared United Nations' Decade for Women. In addition, 1994 was set aside as the International Year for the Family, with unmistakable emphasis on the significance of women in the society. Furthermore, international development agencies have woven gender issues into

In Nigeria, a number of programmes targeted at women have also been implemented. Notable among these are the Better Life Programme for Rural Women, the National Commission for Women, the Family Support Programme, and of recent establishment of the Lederal Ministry for Women Affairs. Another significant move apparently aimed at properly integrating women into the economy, is the creation of Women in

Agriculture departments in all the World Bank-assisted Agricultural Development Projects across The attention being given to women in recent times is probably a recognition of their strategic role in the economy of most Third World countries. For instance, about 80% of food and other agricultural products in Africa is said to be produced by women (Baha and Kyiogwom, 1992), while in Nigeria they constitute 50-60% of rural dwellers (Maigida, 1994). Women are said to take part actively in farming activities and in processing farm products, in addition to their

It is generally acknowledged that women make major contributions to farming in other societies, however, they are considered to be of little importance as source of farm labour in muslim areas of northern Nigeria, presumably because of the muslim practice of 'Kulle' (seclusion) (Norman, 1976; Simmons, 1976; Philip et al., 1988). This position is, however, challenged by the counter proposition that the seclusion theory applies only in the Hausa areas

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of the muslim north and could therefore, not be generalised. It is further argued that even in Hausaland, seclusion is strictly practiced only in urban centres and that women participate actively in farming activities in the rural areas.

The principal aim of this paper is to demonstrate, empirically, the extent of women's involvement in farming activities, their potentials, and their constraints, using Gusau Local Government Area of Sokoto State as a case study.

#### 2.0 Methodology

The study area is Gusau Local Government Area of Sokoto State.' The local government covers an area of 3469km² and has a population of 260,446 people, according to 1991 census figures. It lies in the northern Guinea Savanna ecological zone, with an estimated annual rainfall of about 1,500 mm. Sorghum, maize, millet, rice, cowpea, groundnut, and cotton are the major crops, and are often grown in mixtures. Livestock such as cattle, sheep, goats, and donkeys are also raised extensively.

From a sampling frame of women farmers obtained from village extension agents in the area, a random sample of 50 farmers was selected from Gusau town, as well as Casa, Mada, Magami and Wanke villages. Data were collected from these farmers in April 1995 through interviews using pretested questionnaires. Information was obtained on demographic characteristics of the farmers, farm operations, farm inputs, and agricultural support services. Descriptive statistics were used to analyse the data.

#### 3.0 Results and Discussion

#### 3.1 Demographic Characteristics

The distribution of women farmers according to age is presented on Table 1 which shows that only 6% of the farmers are below 15 years of age. Majority (72%) of the farmers are between 30 and 45 years. This would appear to indicate

Table 1
Distribution of Respondents According to Age

Age (Years)	Frequency	Percentage
<15	3	6
15 - 30	4	8
30 - 45	36	72
45 - 60	5	10
>60	2	4
Total	60	100

that the women involved are adult and able-bodied. Majority (92%) of the women are muslims and 74% are married (Table 2). The fact that majority of the women farmers are married appear to contradict the popular belief that married muslim women in the northern part of Nigeria do not participate in farming activities

Table 2 Marital Status of Farmers

Marital Status	Frequency	Percentage
Married Divorced Widowed Others (Never married)	37 5 6 2	74 10 12 4
Total	50	100

## 3.2 Extent of involvement in farming

The extent of involvement in farming in this study is measured by the main occupation of the women and activities in which they are active. The distribution of respondents according to main occupation is presented on Table 3 which shows that 64% of the farmers identified farming as their major occupation while the remaining are either civil servants or traders who engage in farming as a minor occupation.

Table 3

Distribution of Respondents According to Major Occupation

Main Occupation	Frequency	Percentage
Larming Other Occupations	32 18	64 36
Total	50	100

Table 4 depicts the distribution of respondents according to level of participation in farm operations. As presented on Table 4, women farmers reported active participation in all farm operations with the possible exception of primary land cultivation (ploughing and ridging),

. Table 4

Distribution of Respondents According to Activities in which they are Active

	Active		Not active	
Farm	Frequency	Percentage	Frequency	Percentage
	38	76	12	24
Land Clearing	- 8	16	42	84
Ploughing and Ridging	37	74	13	36
Planting		64	18	36
Fertilizer application	32	94	3	6
Weeding	47	78	11	22
1-tarvesting	39		7	14
Storage	43	86	5	10
Processing	45	90		32
Marketing	34	68	16	32

where only about 16% reported active participation. For land clearing, planting, fertilizer application, weeding, harvesting, storage, processing, and marketing, about 76%, 74% 64%, 94% 79% 91%, 87% and 68% of the respondents, respectively, indicated active participation. These findings appear to be in agreement with the assertion of Ngur (1987), that women in Nigeria are actively involved in such farming activities as planting, transplanting, weeding, fertilizer application, harvesting, threshing, winnowing, transporting, storing, preserving and marketing of produce. Boserup (1970), had also earlier found that nearly all the tasks connected with food production are performed by African rural women with the exception of tree felling and other heavy land preparations related actives. In fact, in the study area, harvesting and processing of crops such as maize, cowpea, cotton, groundnut and pepper are considered exclusively women activities.

### 3.3 Potentials and constraints

#### 3.3.1 Resources

Land is often regarded as the primary input in agricultural production. Emphasizing the importance of land, Lamoriyo (1979) stated that, to the Nigerian farmer, land is the most vital possession and only security in the last resort. Unfortunately, however, it is contended that accessibility of women to this vital resource is highly limited. This problem probably emanates from the unfavorable land tenure arrangement. Land tenure system is largely by inheritance, which in many communities is patrilineal. Studies (Adeyekunmu, 1981; Pala, 1976) have shown that women farmers in Nigeria mostly depend on the generosity of their husbands and male relatives for land, since women are not eligible to inherit land. This lack of title to land, according to Lamoriyo (1979), prevents women from exercising or improving their expertise in crop and animal husbandry because of absence of security of tenure.

This problem is probably prevalent in most African societies, its effects appear to be mitigated, to some extent, in the study area. The Islamic law allows women to inherit land although only half of what the man would inherit under the same circumstances. This indicates that women in the study are able to inherit land quite unlike their counterparts elsewhere in Nigeria. This reflected on Table 5, which shows that up to 72% of the women acquire land through inheritance.

Table 5
Distribution of respondents according to method of land acquisition

Mode of Acquisition	Frequency	Percentage	
Inheritance	3	6	
Renting/Leasing	4	8	
Giù	36	72	
Purchase	5	10	
Total	50	100	

As obtained in most of the inheritance-based land tenure systems, sizes of plots are likely to be small because of fragmentation as the land passes from one generation to another. This perhaps explains the small sizes of farm holdings found in the study (Table 6). A close examination of Table 6 reveals that about 68% of the respondents cultivate less than three hectares, while only 2.04% of the farmer have a farm size greater than five hectares. The problem with fragmented holdings is usually reflected in reduced labour use efficiency and lack of amenability to mechanization.

Table 6
Distribution of Respondents According to Farm Size

Farm Size (Ha)	Frequency	Percentage	
< 1	8	16.32	
1 - 2	15	30.61	
2 - 3	11	22.44	
3 - 4	10	20.40	
4 - 5	4	8.16	
> 5	1 .	2.04	
Total	49	100.00	

Labour is essential for accomplishing various farm operations. A problem for women farmers in the study area is how to obtain hired labour especially for heavy land cultivation operations which they cannot handle. There appears to be labour bottle-neck during the period of land cultivation and women sometimes have to wait for men to complete cultivating their own farms to have access to bired labour. Not unexpectedly, land cultivation is often delayed with adverse effects on crop yield.

Capital is necessary for making different types of investments on the farm. Most rural women operate in the vicious circle of poverty from which they cannot escape without external financial assistance in the form of credit. It is however, reported that rural

women in Nigeria are often by-passed by credit, especially the formal type (Ngur, 1987). This is confirmed in this study where only 20% of the farmers borrow money from banks (Table 7). Even the 20% that benefitted from bank loans are civil servants and factory workers who are educated and have good "connections". Others relied on informal sources (65%), gift (5%), and personal savings (62%). The general non-accessibility to formal credit actually reduced investments in improved inputs which could have increased crop yields and farm incomes in the area.

The distribution of respondent according to inputs source is presented on Table 8 which shows that majority of the inputs are either saved (seeds) or procured in the open market (fertilizers and chemicals). It is significant to note that only few farmers obtained the commodities at subsidized rates from Farmer's Agricultural Supply Company (FASCO) or any government agency. It would appear, therefore, that women farmers have not benefitted from input subsidization policy of the government.

#### 3.3.2 Extension services

Efficient extension services are required for adoption of new technologies aimed at improving productivity of the farmers. In Africa however, it is reported that there is gender imbalance in the distribution of agricultural extension workers. It is reported that only 7% of extension agents in Africa are women (F.A.O., 1989). In the Eastern Zone of the Sokoto Agricultural Development Project, which covers several L.G.A.s including Gusau, there are only two female extensionists as at the time of this study. The dearth of female agricultural extension agents appears to have denied many women direct access to extension information.

Table 7

Distribution of Respondents According to Sources of Finance

Age (Years)	Frequency	Percentage
Bank loan	10	20
Informal Credit	3	6
Gift	6	12
Savings	31	62
Cooperatives	2	0
Total	50	100

Most of the time, women farmers have to rely on extension information that trickled down from their husbands, relative, and/or neighbors. Table 9 presents the distribution of respondents according to sources of extension information. As can be seen from the Table, only 24% of the farmers have received information direct from extension agents. The remaining obtain advice from husbands (50%), neighbors and experienced farmers (24%), and radio programmes (2%). Since women do not have first-hand information from extension agents, they are exposed to the dangers of information distortion.

Table 8
Distribution of Respondents According to Input Source

Se	ed Fertilizer		Chemicals			
Source	Freq.	Percent	Freq.	Percent	Freq.	Percent
Market	16	32.65	39	79.59	41	83.57
Saving	30	61.22	0	0.00	0	0.00
Coops	0	0.00	0	0.00	0	0.00
FASCO	1	2.04	4	8.16	4	8.16
Gift	2	4.08	6	12.24	4	8.16
Total	49	100.00	49	100.00	49	100.0

In addition, they could become laggards in innovation adoption due to delayed access to information.

Table 9

Distribution of Respondents According to Sources of Extension Advice

Age (Years)	Frequency	Percentage	
Extension agent	12	24	
Husband	25	50	
Neighbour/Experienced Farmer	12	24	
Kadio	1	. 2	
Publication	0	0	
Total	50	100	

Following the recent creation of a-Women-in-Agriculture (WIA) department in the Sokoto Agricultural Development Project, however, the extension contact situation is likely to improve. Already several women extensionists (about 35) are reportedly being trained to reach out to women farmers in the state. It is expected that this would reduce the ratio of women extensionist to women farmers in many parts of the state, which would, in turn enhance direct contact with women farmers.

#### 3.3.3 Education

Education of women farmers is considered essential not only to facilitate adoption of improved practices but also to improve quality of life for their families. Snyder (1990), for instance, has observed positive correlation between women education level and family health. Unfortunately, most rural women in Nigeria are illiterate. In this study, only 44% of the respondents interviewed have acquired one from of western education or another. Although this figure is higher than 34% obtained for Nigeria by Adeyokun (1981), more still needs to be done to improve women

education and consequently, improve the chances of increasing their productivity and quality of life.

The trend of female enrolment in schools in the study area however, appears to suggest that things are changing for the better. For instance, female enrolment in primary schools in the L.G.A. has increased from about 3,500 in 1982/83 to about 6,849 in 1993/94 (P.S.M.B. Gusau, 1994) which represents an increase of nearly 96% in just one decade.

#### 3.3.4 Non-Farm Activities

Apart from participating in farm activities, women have additional domestic and reproductive responsibilities as well. These other activities compete with farm operations in a woman's time budget. The responses of women to questions about domestic activities they consider most limiting to their availability for farm work are presented on Table 10. It could be seen from the Table 10 that the most limiting domestic activities are cooking, washing and nursing (42%). This was followed by trading 28%, fetching water 22%, and fetching fire-wood 2%. Further analysis reveals that women fetch water about three times a day from water sources located on the average, about one kilometre from their homes.

Table 10
Distribution of Respondents According to Domestic Activities that Most Hinder
Participation in Farm Work

Domestic Respon.	Frequency	Percentage
Cooking, washing & Nursing	21	42
Trading	14	28
Fetching water	H Common and the comm	22
Fetching fire-wood Others	1	2
	3	6
Total	50	100

From the foregoing, it is evident that any strategy that improves the speed of cooking and washing, and that brings water closer to women would improve their availability for farm work.

#### 3.3.5 Religion

The practice of seclusion of women, is an acknowledged constraint to their availability for farm work in Hausaland. This is particularly true for newly married women and for urban dwellers. The findings of this study have, however, shown that this practice is not strictly adhered to in the rural areas, especially for older women. This category of women who are still able-bodied are allowed to leave their homes and to, among other things, participate actively in farming.

# 4.0 Policy Implications and Conclusion

It is generally held that women in the muslim north do not participate actively in farm, work because of the practice of seclusion. Consequently, strategies aimed at agricultural development such as distribution of improved inputs, extension services and credit, are directed at men who are considered to be the head and "bread winners" of their families. But in reality, and as the results of this study reveal, women, especially those in the rural areas, participate actively in most farm activities. It is therefore suggested that the "seclusion hypothesis" be set aside and women accorded sufficient priority as agricultural producers and change agents. This would give room for balanced planning of agricultural development strategies which recognize the role of women in farming and increase their accessibility to improved inputs and services. It is also suggested that concerted research attention be given to the development of time-saving and drudgeryreducing technologies which would reduce time and energy expended on household tasks by women. In particular, the development of intermediate technologies based on renewable energy sources (such as solar, wind, and biogas) should be given concerted research attention while efforts should be made to bring portable water closer to the farmers. If such technologies could be developed and extended to the rural women, they would be able to devote more time to farm activities. In addition, there is the urgent need for incentives to be provided for women education and training in agriculture in order to produce adequate number of qualified women agricultural workers in the state. This is necessary to improve extension worker-fanner contact and to facilitate transfer of improved technologies to the farmers.

In conclusion, it is reiterated that given the relative ease of accessibility of women in muslim areas to land, through the Islamic law of inheritance, they have enormous potentials for participating in farming, it provided with adequate incentives.

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