Global Journal of Science Frontier Research: D
Agriculture and Veterinary
Volume 16 Issue 4 Version 1.0 Year 2016
Type : Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4626 & Print ISSN: 0975-5896

Women in Smallholder *Fadama* Farming: Significance, Roles and Constraints

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Keywords: *agriculture, smallholders, fadama, gender, food security, nigeria.*

GJSFR-D Classification : *FOR Code: 070107*

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Jake Dan-Azumi

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I. Introduction

Fadama is a Hausa[1] word for wetlands or the seasonally flooded or floodable floodplains along major savannah rivers and/or depressions on the adjacent low terraces. In this paper, *fadama* is used in a narrow way to refer to "actual water surfaces of the ponds and swamps left behind as the floodwaters retreat from the floodplains of the largest river (FAO, 2008) and not simply the seasonally flooded lands that tend to dry up after the rainy season. In the savannah and arid/semi-arid areas of Northern-Nigerian (where rainfall is often low or erratic) *fadama* are an important source of agricultural production and have been utilized using traditional methods and indigenous knowledge of the ecosystem accumulated over centuries (Lustig, 2008). Smallholder farming families engage in subsistence farming in which family needs determine the scale of production and wherein small plots of land are cultivated by individual owners or sub-owners using age-old methods of soil and water management. Smallholders uses mainly family labor which could be augmented with minor hiring of labor and labor exchanges with other farmers at peak seasons. The essential factors of production – land, labor, and capital are provided within the family.

Smallholders can hardly be characterized as a homogenous group. They are diverse and varied and include a wide array of rural people who practice intensive, permanent, diversified agriculture on relatively small farm areas of dense population. A characterizing feature of smallholders is the organizing unit of the family household where agricultural labor is mobilized, resources are managed and consumption is organized. Most smallholders utilize the scarce land available to them and optimize per unit area production. About two-thirds of all the agricultural holdings in the world are between one and five hectares. About two-thirds of all the agricultural holdings in the world are between one and five hectares. The bulk of the food need of the world's population is, therefore, provided for by these smallholders who cultivate units in the 1-5 hectare range. (Von Grebmer et al., 2008).

The relationship between gender roles and agriculture is an intricate, complex but essential one. This is even truer for developing countries where women are closely associated with smallholder agricultural production. Half of world's staple food (wheat, rice, maize) is produced by rural women, most of whom live in developing countries and account for between 60 and 80 percent of the food in these countries (World Bank, 2001, Oputa et al., 1985, Erenstein et al., 2003). In sub-Saharan Africa, for instance, 80% of basic foodstuffs both for consumption within the household and for sale are produced by women (90 per cent of women in SSA are farmers) (World Bank, 2007c, Carrol et al., 1990, Marx et al., 1971). Similarly, women provide labor on most farms through activities like sowing, weeding, fertilizer and pesticide application, harvesting and threshing of crops and food processing and storage (FAO, 2005).In Nigeria, more than 80% of rural women are engaged in agricultural production and forestry and provide more than 70% of the labor force (Holt-Giménez, 2008, Henschen, 2009, Fairtrade Foundation, 2009).

The role that women play in agricultural production has increased in the last decades in many

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[1] The language (Hausa) is a Chadic language belonging to the Afro-Asiatic language family and it is one of the three major languages spoken mostly in Northern Nigeria and across West Africa.

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developing countries. This change of trend in gender role and division of labor, particularly in developing countries like Nigeria, has partly been explained in terms of the neo-liberal policies experimented with in most developing countries (e.g. structural adjustment programmes) since the early 1980s. The effects of liberalizationon smallholders include higher input costs, lower farm-gate prices and cuts in access to credit and extension services. This problem was compounded by increasing land scarcity especially in sub-Saharan Africa (Atkinson, 1991), high rates of mortality of working men due to HIV/AIDS, rural-urban migration of men searching for better opportunitiesThe effect of this is more on smallholders as women become principal farmers in the absence of men (Blaikie and Brookfield, 1987). This phenomenon has been described as the 'feminization of agriculture,' i.e. increased participation of women in the agricultural labor force as independent producers, unremunerated family workers or as agricultural wage workers (Bryant and Bailey, 1997, Robbins, 2004). It is not just the task of food provisioning that has fallen more and more to women but other social responsibilities such as educating the children (Gray and Moseley, 2005).

However, that the 'feminization of agriculture' does not always mean empowerment. Whereas in some cases and cultural contexts women's role as economic producers has translated into more power in the household and community, in others women continue to be subordinate to men. Despite the greater responsibility that changes in agricultural production has thrust on women, they face immense problems such as limited or no access to land, credit, extension services and technology(Peet and Watts, 1996, Bryant and Bailey, 1997, Peet and Watts, 2004, World Bank, 2007a, World Bank, 2007b). Generally, it is very difficult for women to overcome these obstacles because even their political and organizational rights are severely curtailed and their involvement in policy and decision making minimal(Derbyshire, 2002, Zuckerman, 2002, Chattopadhyay and Duflo, 2004, World Bank, 2005, Inter-Parliamentary Union, 2006, UNIFEM, 2007)

II. Study Area and Participants

The participants in this research were rural farmers in two villages in North-Central Nigeria: Karshi and Baddeggi, two small agrarian communities in North Central Nigeria. Karshi, the core study area and the place that provided the bulk of the data for the research, is one of the satellite towns of Abuja, Nigeria's capital city. It covers a land area of 8,000 square kilometers and is located in the middle of the country. Abuja falls within latitude 7° 25' N and 9° 20° North of the equator and longitude 5° 45' and 7° 39'. Karshi is one of the typical settlements in Abuja and consists mainly of rural indigenous communities engaged mostly in farming and related activities. Gwari, Gwandera and Gwandu are Karshi's predominant ethnic groups.

Baddeggi is a small district of Bida town, the second largest city in Niger State. Bida sits on the Bako River, one of the several minor tributaries of the Niger River. It is approximately 100 km/60 mi southwest of Minna and 200 km/120 mi northeast of Ilorin and falls on Latitude 9° 4' 60 N, Longitude: 6° 1' 0 E. Baddeggi is a major trade center for rice, which is mainly cultivated in the *fadamas* of the Niger and Kaduna rivers. It is predominantly inhabited by the Nupe people. Most of the inhabitants of Karshi and Baddeggi are farmers involved in both upland and lowland (*fadama*) farming. Baddeggi served as a comparative study of the similarities and differences with Karshi and the underlining general structure that generates them.

III. Data and Methods

Methodological Triangulation was used in this research. It is pluralistic, mixing the mainly qualitative data (generated from in-depth interviews) with quantitative data (generated from survey methods) (Hurst, 1990). This is in line with the realist epistemology/ontology that sees reality as stratified; on the one hand social objects have a real ongoing existence irrespective of what we know of them, while on the other hand they are affected by the way they are construed (Moody, 1996). Triangulation considers as false the claim that quantitative and qualitative methodologies are incompatible (Altieri, 1998) and seeks to avoid simple generalizations by enabling a more comprehensive understanding of social phenomenon carter (Moseley, 2005).

Over a period of four months, 47 people were interviewed in-depth in Karshi and 21 in Baddeggi. The research strategy consisted of mixed techniques led principally by a core interview schedule which was complemented by a follow-up strategy, involving survey techniques used to accurately measure the demographic features of the research participants and the extent of agrochemical use. The research methodology was Grounded Theory (GT) as the research was concerned with expanding an explanation of *fadama* agriculture through the identification of its key elements and then categorizing the relationships of those elements to the context and process of the experiment (Collings, 1995, FAI, 2004). The data collected was mainly analyzed using the qualitative GT technique which helped to achieve a more critical and reflexive interpretation of the statistics generated and hence helped to avoid the often simple, general and impersonal nature of statistics.

IV. Results and Findings

In Karshi village, 47 farmers were interviewed. Of these, 27 (57.4%) were females and 20 (42.6%) were male. Like in many parts of Nigeria, smallholder rice farming in Karshi is predominantly done by women (table 1). Others are involved in cultivating such crops as cowpea and a broad range of vegetables. In Baddeggi,

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however, 81% of the respondents were men while only 19% were women. The involvement of women in both communities is related to religious and cultural norms.

An examination of the *fadama* farming in Karshi immediately reveals the place and importance of women in the production chain. Inextricably linked to agriculture and to the role that women play in food production in Karshi are other complex issues such as religion, social process and power relations. Findings in Karshi reveal and corroborate what is now a widely accepted fact, namely the role of women in development and food provision in Africa and many parts of the developing world. In Karshi, a substantial quantity of the food consumed and sold is produced by women. For instance, rice is the exclusive reserve of women while the men are involved in the cultivation of crops such as yam, cassava, maize and sorghum. In addition to rice, however, other important crops grown by women in Karshi include cowpea, vegetables and fruits and beans. Much of Karshi's agricultural productivity relies on women labor and the multiple roles they play in the general life of the community. Women, in Karshi, are the string that holds together the social milieu and ensure stability through efficient juggling of their roles as farmers, mothers, marketers, cooks and health care providers.

74.5% of the respondents in Karshi were Muslims, while 25.5% were Christians or practitioners of traditional religion. All of the respondents in Baddeggi were Muslims. Religion is an important factor and shapes such issues as land ownership, marriage, and indeed the whole social milieu. Nevertheless, the understanding and practice of religion slightly differs in the case of Karshi and Baddeggi. In the former, the majority of women were involved in farming, whereas in the latter, very few women were involved in farming due restrictions placed on them by their husbands on religious grounds. In both cases, though, access to female farmers was initially difficult due to religious restriction (*purdah*).

Table 1 : Statistical distribution of farmers based on sex and farm size in Karshi

		Karshi		Baddeggi	
		Frequency	Percentage	Frequency	Percent
Sex	Male	20	42.6	17	81.0
	Female	27	57.4	4	19.0
	Total	47	100.0	21	100.0
Farm Size	1Ha & Below	28	59.6	6	28.6
	Between 2-4Ha	19	40.4	15	71.4
	Total	47	100.0	21	100.0

Majority (59.6%) of the respondents in Karshi cultivate between 0.2 to 1Ha of land, whereas 40.4 % cultivate between 2-4Ha (table 1). In Baddeggi, however, a higher percentage of the respondents (40.4%) have between 2-4Ha while 59.6 have 1ha or less. The bulk of the farmers, therefore, fit into the general characteristics of smallholder farmers typical in many developing countries of Africa. Similarly, land use is intensive among the majority of the respondents as they attempt to alleviate land constraints. As in many parts of Africa, arable land is a priced commodity in Karshi and Baddeggi in light of scarcity and population growth. The problem is compounded in Karshi because of the influx of people into Federal Capital Territory (Abuja) and land loss to road construction through the community. The pressure on land is also not helped by the lack of viable alternative employment opportunities in the non-farm sector.

The size of a man's land in the two communities is closely linked to his ability to produce more and invariably, this places him well above other members of the community. As indicated above, the bulk of the farmers with more than 1ha of land are men as women almost exclusively cultivated between 0.2-1ha of land.

Respondents in Karshi were between the ages of 29-56. The mean age of the farming sample is 37 (with the minimum being 29 and maximum 56). The mode age is 38. In Baddeggi, the age range is higher with the mean age being 43, while the median and mode ages are 42 and 38 respectively. It appears, consequently, that most of the farmers are in their prime age and therefore energetic for farming purpose. In contrast however, the age distribution shows fewer young people engaged in *fadama* farming in the areas of study. This can be explained by factors that include migration, the search for more profitable sources of income, and the fact that most male children of these farmers are enrolled in schools (primary and secondary).

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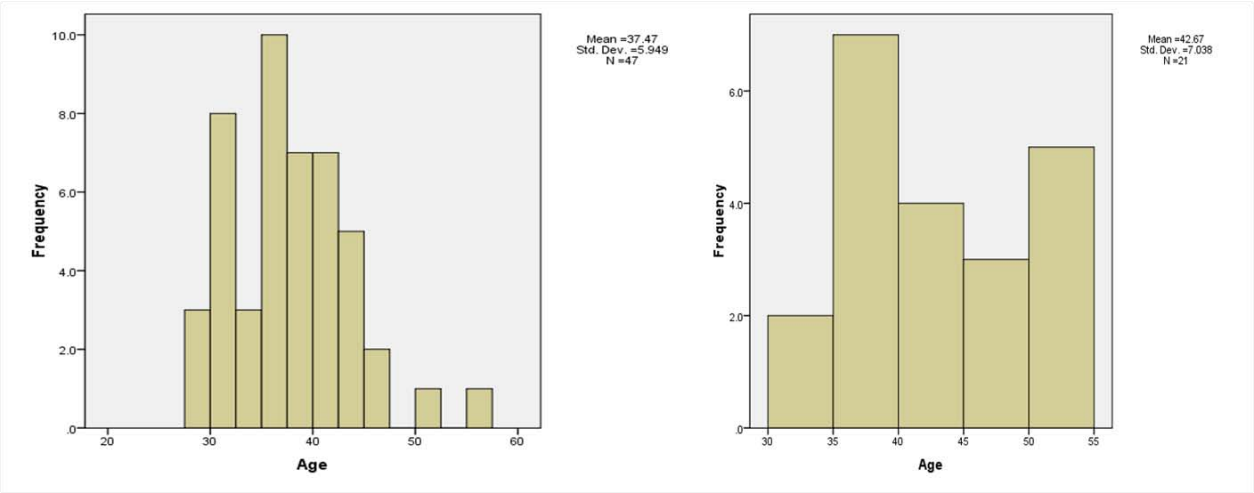

Figure 1 : Histograms showing age distribution of farmers in Karshi and Baddeggi

The boxplot (fig. 2) below compares the distribution of age across sex in Karshi. The median age of males is higher and, overall, the age ranges are higher. The spread of ages, indicated by the size of the shaded boxes and the length of the T-bars, is also higher for males than for females. In Baddeggi, however, the median age of women was lower given that few women farmers were interviewed.

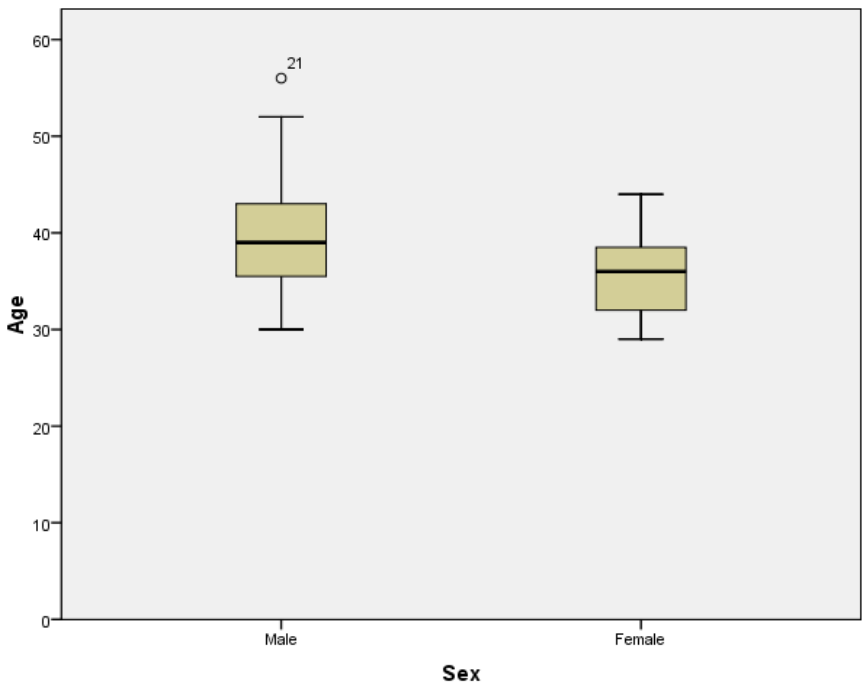

Figure 2 : Boxplots illustrating age distribution of male and female farmers in Karshi

A cross tabulation of sex and age shows significant differences in the age distribution between men and women. The data for age was recoded into 3 equal groups as indicated in below (table 2.). In Karshi, none of the men respondents is between the age ranges of 20-29 and 11.1% of female respondents fit into that age bracket. 50% of men respondents fall between the age categories 30-39 in contrast to 66.7% of the female respondents (table 23). While 22.2% of the female respondents are between the ages 40-49, most of the men respondents (40%) fall within that age bracket. 2 of the men respondents (10%) fall between 50-59, with none of the female respondents within that age range. Majority of the female respondents therefore, are younger than their male counterparts in Karshi.

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Table 2 : Cross-tabulation of sex with age categories for Karshi and Baddeggi

		Karshi				Baddeggi			
		Age categories				Age categories			
		20-29	30-39	40-49	50-59	20-29	30-39	40-49	50-59
Sex	Male Count	0	10	8	2	0	5	7	5
	% within sex	.0%	50.0%	40.0%	10.0%	.0%	29.4%	41.2%	29.4%
	Female Count	3	18	6	0	0	4	0	0
	% within sex	11.1%	66.7%	22.2%	.0%	.0%	100.%	0%	.0%
	Total Count	3	28	14	2	0	9	7	5
	% within sex	6.4%	59.6%	59.6%	4.3%	.0%	42.9%	33.3%	23.8%

Among the male respondents in Baddeggi, 5 (29.4%) were between 30-39; 7 (41.2%) fall within the 40-49 range and 5 (29.4%) are between 50-59. All the 4 female respondents are in the 30-39 age brackets. The median age of the respondents in Baddeggi is therefore higher than that in Karshi among both sexes.

All of the respondents in Karshi and Baddeggi are married, with most of the men being polygamous (only 2 of the male respondents in Karshi were monogamous). All the respondents have children, with the highest percentage (67%) in Karshi having between 5-9 dependents, which also represent the average size of most households. 33%, have between 5-21 dependents. In both Baddeggi, the mean number of children is about 8. The majority of the farmers, therefore, depend on family labor.

Most of the women as seen above are in their most productive age and they invest most of their energy in the agricultural enterprise. Women's labor is the lifeline of Karshi's agriculture as they are involved in all stages of agricultural production: land preparation, planting, weeding, chemical application, harvesting, transporting, processing and marketing. In addition to working on their own farms, they also help their husbands at various stages of the process of agricultural production. Thus, women spend more hours on average on farms than men do, most of whom claim to attend to other more 'masculine' functions. Generally, men make decisions while women do the real work.

V. Educational Qualifications

The level of literacy among the farmers in Karshi is very low with only a handful of them able to read and write. As shown in table 3 (below), 61.7% of the farmers did not have any formal education while only 23.4 have had primary school education. None of the respondents had post-secondary school education. In Baddeggi, on the other hand, 33% had no formal education while 47.6% had primary school education with the remaining 19% having some form of formal education beyond primary school. The level of formal education is, therefore, higher in Baddeggi than in Karshi. The reason for this is the well-established status of Baddeggi as a major farming and trading center with a significant government presence.

However, 86% of the respondents in both communities have Qur'anic education which is mandatory for children between the ages of 5-18 in most Muslim households. Some of the respondents are able to read and write Arabic but cannot read nor write in English.

Table 3 : Level of education, risk awareness and use of protective clothing among Karshi farmers

		Karshi		Baddeggi	
		Frequency	*Percentage*	*Frequency*	*Percent*
Education	No formal education	29	61.7	7	33.3
	Up to Primary School	11	23.4	10	47.6
	Up to secondary sch.	7	14.9	4	19.0
	Total	47	100.0	21	100.0

VI. Sources of Income of Respondents

The majority of the respondents in Karshi (74.5%) have agriculture (crop and animal husbandry) as their only source of income (table 4). The other 25.5%, in addition to farming (usually in a reduced scale than the previous group), are involved in other off-farm activities. In Baddeggi, 71.4% of the respondents depend exclusively on crop and livestock production for their income, while 28.6% depend on other off farm activities, in addition to agriculture. Off farm income sources include trading and crafts such as mat weaving, carpentry and building. Most of the respondents in both Karshi and Baddeggi (75.6%) are involved in both rain-fed agriculture and recession farming (irrigation).

Savings (*adashe* in Hausa) is a common practice among the farmers in Karshi and involves financial cooperation among friends, cooperatives, colleagues and trading partners. According to Woolcock(1998)*adashe* is "a spontaneous 'bottom-up' group formation, initiated and sustained by members themselves in response to their isolation from orthodox commercial banks" (p. 183).

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Table 4 : Sources of income of respondents

		Karshi		Baddeggi	
		Frequency	*Percentage*	*Frequency*	*Percent*
Income	Farming/livestock	35	74.5	15	71.4
	Farming with other	12	25.5	6	28.6
	Total	47	100.0	21	100.0

The general gross income of the farmers at the end of each farming season was reasonably high (table 5). In Karshi, the highest category of farmers (62.5%) earn between NGN50, 000-NGN100, 000 while 22.9% (mostly those who own between 2-4Ha) earn above NGN100, 000. Only 12.5% of the respondents earn NGN50, 000 or less. In Baddeggi, the majority of the respondents (57.1%) earn more than NGN100, 000, 28.6% earn between NGN50, 000-100,000 and 14.3% earn less than NGN50, 000. The higher income among Baddeggi farmers is related to their farm size, proximity to a river (hence water availability) and the research institute (The National Cereal Institute) with the fringe benefits it offers by way of agricultural extension.

Table 5 : Income by categories

		Karshi		Baddeggi	
		Frequency	Percentage	Frequency	Percent
Income (By category)	NGN50,000 & Below	6	12.5	3	14.3
	NGN50,000-100,000	30	63.8	6	28.6
	Above NGN100,000	11	23.4	12	57.1
	Total	47	97.9	21	100.0
	Missing system	1	2.1		

Much of the income is invested on meeting social pressures especially on health and the education of their children. Due to poor storage and loss during harvest, the income of the farmers is negatively affected.

In Karshi, the right of women to what they produce is well protected as the woman is fully entitled to what she produces and to the proceeds from sale of the same. She is under no compulsion to give or share with the husband her income. Most women, however, share in the responsibility of feeding their children and often take from their reserves in the event that the husband is unable to provide sufficiently for the family. This is important because many of the women are in polygamous relationships and, whereas it is the husband's traditional duty to provide food for the family and shoulder other social pressures, it is often the women who are left to carry the burden. For instance, the health care needs of the children are met by women from their income. Findings in Karshi thus conforms to extant literature that shows that play a key role not only in agricultural processes, feeding of the family but also providing general care for children (Quisumbing et al., 1995).

The men in Karshi are, for the most part, supportive of their wives and, in addition to showing goodwill, some of the men give their wives financial assistance and assist them with some aspects of production such as applying chemicals on their farms. Similarly, the men ensure that their wives have access to as much land as they need and as is available. In general, the men are aware of the important role their wives play as mothers, wives and farmers. This recognition is higher among men who do other jobs alongside farming (artisans) and who often look up to their wives to supplement their income.

VII. Land Acquisition

The method of land acquisition among the respondents in Karshi indicated the following: majority of the (female) respondents (57.4%) acquire land either from husband or from family. 33.4% acquire land by inheritance while the remaining 8.5% get their land either by borrowing or pledge. In Baddeggi, majority of the respondents (85.7%) acquire their land through inheritance with the remaining 14.3% (the female respondents) acquiring theirs from their husbands.

Table 6 : Means of land ownership in Karshi and Baddeggi

		Karshi		Baddeggi	
		Frequency	*Percentage*	*Frequency*	*Percent*
Means of land ownership	From husband/family	27	56.2	3	14.3
	Land from inheritance	16	33.3	18	85.7
	Borrowing/pledge	4	8.3	0	.0
	Total	47	97.9	21	100.0

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This can be explained by the fact that the majority of the farmers were women and, culturally speaking, they are not allowed to own their own land; neither can they inherit land. In general, a combination of cultural reasons and the nature of the tenure system in Nigeria makes land acquisition difficult outside one's place of ethnic origin (Abdullahi, 1981).They are allowed to work on land owned by their husband or their father. Generally, therefore, the majority of the respondents who are women cannot have long term plans because they do not own land, which is an important resource not only for subsistence but also as security for credit and means for access to other credits (Acati, 1983). Studies from other African countries like Ghana show that women only held land in a small percent of households (Deere and Doss, 2006).

Notwithstanding their input to agricultural production, women are greatly disadvantaged and they cannot own land in Karshi. Findings from the fieldwork amply demonstrate that the disadvantageous position of women in traditional African communities is firstly a result of religious and cultural anachronism which understands 'the woman in a certain' way and thus constructs her identity and role accordingly. For instance, in Karshi, women are considered as subordinate to their male counterparts and in many ways their rights, such as access to land is tied to marriage and hence to men. This not only gives the man precedence and power over the woman but also restricts efficient planning on the woman's part as the land can be taken away in the event of divorce or the death of the husband.

In general, however, three factors determine land tenure and women rights in Northern Nigeria: religion (*Shari'a*), local customs, and politics (GRAIN, 2008). Thus, if smallholders are generally maligned in government's development policy, women suffer twice the pain. First, they are rarely targeted by agricultural programmes which are very male-centric based on a limited understanding of the roles women play in agricultural production. Secondly, women are further restricted by religious and socio-cultural conditions which view them as subservient to men and second class citizens.

The perpetuation of this conception of the feminine is deliberately upheld as a means of control and ascendancy by the man. The realm of the sacred (religion), which is considered as sacrosanct and infallible, provides a subterfuge for this continued dominance. In an open admission, the chief of Karshi admitted that men use land ownership as leverage against women. This allows them to exercise power and control over the woman. Men, often use threats of land withdrawal to reduce the risk of dissent and rebellion from their wives. According to the chief, "the women are as powerful as it were, because they earn good money from farms and in a way, the man cannot really tell her much, because she contributes in family sustenance. The land, therefore, is the only means of control the husband has over the wife." Thus, men defend and perpetuate the laws of land inheritance because it favors them (Taylor, 2009). The response of women through 'silence' has only affirmed and consolidated traditional gender roles. Many women are reluctant to discuss the issue of land rights but when they do, they express dissatisfaction at the present status quo. Whereas some accept the situation on the basis of religion and culture, a few others express a desire to see a change, even though they realize it is going be difficult given those prevailing circumstances. The women respondents are aware of their contribution to the rural economy and family subsistence and are proud of having an independent source of income from their husbands'. Similarly, they show consciousness of the power dynamics which men perpetuate in the name of culture and religion. However, none of the respondents feel they can change the existing order even if they all wish they had more access to land and credit.

VIII. Labor

Land preparation, weeding and harvesting are mostly done manually with the help of traditional farm implements. None of the farmers in Karshi has regular access to a tractor. Thus, land preparation and weeding is often labor intensive, especially on rice farms and this in part explains the appeal of herbicides.

Table 7 : Source of labor in Karshi and Baddeggi

		Karshi		Baddeggi	
		Frequency	*Percentage*	*Frequency*	*Percent*
Labor	Self/family labor	36	76.6	11	52.4
	Hired Labor	11	23.4	10	47.6
	Total	47	100.0	21	100.0

About 77% of the farmers in Karshi use family-based labor, often with help from other extended family members and farmer organizations (*gandu* or *gaiya*). The remaining 23%, who represent the more 'successful' of the farmers (owning between 2-4Ha of farm) employ outside labor ranging between 3-5 people to help with farm work. Among the respondents in Baddeggi, the majority (52.4%) rely on family labor and 47.6% rely at some point during the farming season on hired labor. The higher percentage of farmers relying on external labor in Baddeggi is related to the fact that more farmers own between 2-4ha of land. In general, however, hire is not very common among the respondents in both Karshi and Baddeggi. In Karshi, most of the work is done by women

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and their female children as preference is given to male education over female education and this means that the girl child is often at home with the mother.

Polygamous families are able to mobilize and take advantage of the bigger labor pool available to them and hence are able to produce more. Also, the few more successful farmers can hire outside labor which often consisted of individuals (mainly single men) and families with insufficient land.

Those who do not work as paid laborers are often engaged in off-farm activities and artisanship both around the two communities and in the nearby cities of Abuja and Bida. Thus, through a combination of farm and off-farm activities, the people of Karshi and Baddeggi are able to manage their poverty. Yet, there was no visible evidence of competition and younger single men did not seem keen on taking up full-time farming for what they consider to be the absence of 'incentives'. Similarly, class formation and differentiation was not visible mainly due to the influence of Islam which is critical of economic competition, class struggle and materialism.

The use of family based manual labor can be attributed to a number of reasons. Firstly, land preparation and weeding are feasible because the respondents farmed small farm sizes (between 0.5-1Ha see table 22). Similarly, the size of most families is a contributing factor to its feasibility [or lack of it]. Many of the families are polygamous with over 92% of the men farmers in both communities having between 2-3 wives in line with Islamic principles. The mean number of children for each family is 8. Most men farmers work averagely between 5-8 hours daily (except on market days and on Friday, which is the Muslim holy day). The number of working hours is higher among women farmers who often spend between 8-12 hours daily on the farm or doing farm-related activity.

Generally, it is considered that Islam defines clear roles for men and women and exempts secluded women from farming. This is obviously the case in Baddeggi where all the men interviewed were men who do not allow their wives to farm. The basis for this, as claimed by all the men, is religion which defines their role as bread winners of the family. However, the opposite situation obtained in Karshi, a similar Muslim dominated community where women are allowed to farm. This confirms recent study which shows an increase in the number of women involved in agriculture, even in Northern Nigeria (The Economist, 2009, Taylor, 2009). It further shows a difference in understanding and interpreting religious precepts and laws.

In addition to their major role as food producers, Karshi women - like all rural women - have to meet the demands placed on them by religion and socio-cultural circumstances. Thus, they often have to return home at given hours and take care of domestic needs: cook for the family, take care of the children and wait on their husband. Many mothers take their infant children along to the farms and look after their needs between working hours. So, women often take break to breastfeed their children and clean them up. Thus, competing tasks, especially during the farming season, takes a lot of energy from women and exposes them to so many health risks. For example, after the exhaustion of working on the farm, the women come home to cook with babies strapped on their backs while enduring the smoke from the firewood. Some of the women complain about having backache, general fatigue (from bending down, and working on the land to pounding yam – all of which are labor intensive) and respiratory problems. Notwithstanding, they have to carry on because a break means more difficulties in the family. Additionally, women also feed and milk animals and raise poultry and other small animals. Women labor is often only complemented by help from female children, co-wives and co-operatives (*gaiya*)

Most of the male children (about 88%) and 55% of female children are enrolled in either primary or secondary school, which makes them available for work on farm only on certain days. Labor shortage is a common occurrence especially during peak periods of land preparation, planting, weeding and harvesting. Female labor constitutes the bulk of the family labor as they are involved in planting, weeding, threshing, winnowing, and transportation.

Of the respondents, 75% have had between 7 years of *fadama* farming experience, while the other 25% have between 8-15 years of farming experience. Thus, it can be safely assumed that all the farmers interviewed are experienced in the farming and management practices of *fadama* areas.

IX. Conclusion

Women play a crucial role in smallholder agricultural production in many developing countries including Nigeria. Through the plurality of the activities they perform, they are key to the survival of poor rural households. Such activities range from crop production, livestock care and food and fuel provisioning. The role that women play in rural households has grown in light of increased male migration to urban areas leading to the feminization of agriculture.

In spite of the fact that the proportion of woman-headed households have grown to almost one third in many developing countries, women continue to be marginalized in agricultural policies: they have less access to land, capital, credit and other social assets than men and most importantly in many developing countries by cultural practices as evidenced by findings in Karshi and Baddeggi.

To challenge the multiple constraints women engaged in fadama farming face, it is critical for women to build on the limited rights and privileges already in place as a means to overcoming and transforming the ideologies, attitudes, values, structures and behavior that

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create hierarchical and dominating power relations in their communities. By so doing, women can articulate their demands and exert more influence (Jain, 2005). Also, at the policy level, the use of affirmative action has been advocated for as a means of "reducing poverty, generating income and increasing women's self-esteem, empowerment and economic autonomy" (Vargas-Lundius, 2007).

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