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Level of empowerment of women in rural areas in Delta State, Nigeria: Agriculture and related activities

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Abstract The capacity of agriculture and related activities as means of women empowerment in the rural areas of Delta state, Nigeria was examined. The results revealed a mean age of 45years, 61.22% were married, 29.10% had secondary education and 20.20years farming experience was recorded. Also, the average income ₦49, 750 was recorded and 52.90% lived in standard houses with a mean household size of 7 persons. About 79.20% and 74.27% respondents had no extension contact and were arable crop farmers respectively. Empowerment facilities accessed by the women were micro credits, training and inputs. The result showed that most women were able to carter for their wards. The empowerment index of 0.74% indicating that 74% of the women were empowered. The hypothesis showed that there was significant relationship between the women's choice of agriculture and related activities for empowerment and their socioeconomic attributes. There was significant difference in the sources of initiative and support among women in the study area. Among constraints identified were lack of government assistance 80.58% and lack of finance (70.39%). It was recommended that government should not only train rural women but also provide micro credits, inputs and deploy extension agent to these rural areas.

Keywords: Agriculture and related activities, Empowerment, Rural development and women

Introduction

Empowerment is the raising of individuals and or group awareness in order for them to be able to make effective use of their own resources through discovering their abilities (Klasen, 2018). Empowerment could come through increased technology awareness of farmers, greater access to information, resulting from technological and other related developments. This is more so as most women farmers are involved in production, processing and marketing of farm products.

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Agriculture activities means the use of land for farming for the production of food and fiber products including seeding, cultivating and harvesting, beekeeping, horticulture, viticulture and animal & poultry husbandry. There are different types of agricultural activities such as commercial farming e.g. dairy farming, cereal crops, plantation agriculture. Agriculture related activities are activities related to agriculture such as forestry and fishing industry sectors, agricultural marketing, and logging jobs (Mahadeva and Keshavamurthy, 2015). One of the cardinal objectives of agricultural extension is empowerment of farmers through knowledge trading, skills and technology transfer, and information dissemination or exchange. It has been established by various scholars that women are more involved in agricultural activities than their male counterparts.

In Africa and many developing countries like Nigeria, women make up more than one third of the agricultural workforce. Agarwal (2018) states that women account for 70% of agricultural labour, 80% of food production, l00% in processing basic food stuffs and 60-90% inthe marketing of agricultural produce. Women have been identified as playing important roles in national development hence many organizations like Food and Agriculture Organization (FAO) have continued to make meaningful contributions towards women's empowerment (World Bank, 2007).

Women in the rural area manage a lot of household activities and pursue multiple livelihood strategies. Their activities include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or some other rural enterprises, engaging in trade and marketing of agricultural produce, caring for their families and their homes. Most of these activities are not seen as being economically active employment in national account, but are seen as being essential for the wellbeing of household in the rural area. However, agricultural sector is underperforming because women who represent an important resource in agriculture and the rural economy through their roles as farmers, labourers and enterprises, face more severe constraints than men in access to productive resources (FAO, 2011).

Rural women involvement in domestic activities have often cause harm to their health which could contributes to the high rate of infant and maternal mortality, reversing progress in education and endangering food security and nutrition. Agriculture is the main alternative for rural women, they should come with better access to land and resources for the prevention, adaptation and mitigation of climate change, combined with rural women learn how to deal with cultural resistance and to various manifestation of the phenomenon. Recently, governments tend to pay more attention to the agricultural sector compared to other sectors in Nigeria. However, more investments and

intervention are needed critically. Rural women empowerment guarantees increase in food production, but it is not enough to meet future yeanings of the emerging populace (FAO, 2007).

Damisa *et al.* (2007) revealed that research conducted on the contribution of women to agricultural development in the country suggest that women's contribution to farm work is as high as between 60 to 90% of the total farm task performed. The contribution of the women ranges from such task as land clearing, land tilling, planting, weeding, fertilizer/manure application to harvesting, food processing, threshing, winnowing, transportating and marketing as well as management of livestock as well.

It has also been demonstrated widely that rural women, as well as men throughout the world are engaged in a range of productive activities essential to household welfare, agricultural productivity and economic growth. Yet, the substantial contribution of women continues to be undervalued in conventional agricultural and economic analysis and policies while contributions of men remains the central, and often the sole focus of attention (Fabiyi *et al.,* 2007).As a result of the low level of attention and asset denial experienced by them there is need to carry out a study on the level of empowerment of woman in the rural area in Delta State, Nigeria.

The study was to determine the socioeconomic characteristics of the rural women, identified the women's agriculture related activities and the type and sources of initiative, and determined the women's level of empowerment. The contribution of sources of empowerment of women through agriculture was ascertainedand identified the likely constraints to empowerment faced by the rural women.

Materials and methods

The following questions were considered aswhat are the socioeconomic characteristics of rural women in Delta State? What are the type and sources of initiative and support? What are the agriculture and agriculture related activities of rural women? What are the women levels of empowerment? Do the sources of empowerment initiatives of women through agriculture related activities contribute to their empowerment? What are the empowerments related constraints faced by the rural women?

Hypotheses to be tested as:

$H0_1$: Socioeconomic attributes of women do not influence their decision to access initiative and support for economic empowerment through agriculture related activities.

$H0_2$: There is no significant difference in the sources of initiative and support among the three agricultural zones of delta state.

$H0_3$: The sources of empowerment initiatives of women through agriculture related activities do not contribute to their level of empowerment.

The study was carried out in three agricultural zones in Delta State, Nigeria in December, 2021. The state has a wide coastal belt inter-lace with rivulets and streams, which form part of the Niger Delta. Delta State is demarcated into 3 agricultural zones which are Delta North, Delta central, and Delta South Agricultural Zones. The population for the study comprised of rural women farmers in Delta State of Nigeria. Out of the Local Government Areas that make up the three agricultural zones, twenty percent (20%) of the Local Government-Areas were randomly selected from each of the agricultural zones. Delta North two Local Government Areas, Delta Central two Local Government Areas and Delta south one local Government Area giving a total of five local Government Area. The two rural communities were selected from the chosen Local Government Areas which resulted to ten rural communities. The help of key informant, rural women were identified in each rural communities and listed. Randomly, ten percent (10%) of women identified gave a total of 246 respondents selected for the study.

Data were collected from primary sources (rural women). The data were obtained by the use of structured questionnaire which was administered with the aid of trained enumerators that were chosen from agricultural teachers within or close to the communities selected. Originally 246 copies of questionnaire were administered, but 40 copies could not be retrieved, hence 206 respondents were used for the study.

The instrument for data collection was subjected to validation by experts in the Department of Agricultural Economics and Extension, Delta State University, Abraka.The instrument was administered to respondents, three weeks after the first administration and tested for reliability with the use of Pearson product moment correlation analysis and the reliability coefficient was r =0.813. This implies that the instrument was reliable.

The variables of the study were socio-economic characteristics, agriculture and agriculture related activities of rural women, types and sources of initiative and support, women level of empowerment and constraints to agriculture and agriculture related activities experienced by rural women farmers. Some socioeconomic characteristics such as house status were measured on. standard, sub-standard and dilapidated. Standard = block or cement houses, sub standard = mud houses or thatched, dilapidated= houses which are almost falling while house hold sizewere indicatedby the number of

persons. Respondents were asked to indicate their source of land: family owned, rented or bought and how much they earn monthly. The respondents were asked to indicate the agriculture and related activities in their area such as crop farming, poultry, animal husbandry, horticulture, sales of farm produce which they are involved.

Also, the types and sources of initiative and support they have benefited from and indicate their level of empowerment. By showing if they have the ability to feed their families adequately without borrowing, ability to plough back capital without resorting to borrowing and support. This was indicated on a likert type scale of strongly agree 4, agree 3, disagree 2, and strongly disagree 1 where; 4 is 10, 3 is 7.5, 2 is 5 and 1 is 2.5. Thus, 10 divided by 4 is 2.5 which is the cut-off point of the 4 likert type scale as showed by Handy and Kasam (2004). Rural women were asked to indicate constraints facing them in the course of carrying out their agriculture and agriculture related activities. This was measured in percentage. Constraints having above 60% was seen as very serious, 40 to 59% was seen as serious, 20 to 39% was seen as not serious and those below 20% was seen as not very serious.

The data were analyzed with the use of descriptive statistic such as frequency counts and percentage and means derived from a 4- point likert type scale. The objectives were achieved with frequency counts and percentages , measured from a 4 points likert type scale, achieved with hypothesis iii. The hypotheses were tested using inferential statistics. Hypothesis I was tested using multiple regression model, hypothesis II was tested with the application of one way ANOVA and hypothesis II was tested with pearson product moment correlation coefficient using SPSS (23).

Results

Socioeconomic characteristics of the respondents

Result showed that majority (31.50%) of the respondents were in the age bracket of 40- 49years, some (29.40%) which were in the age bracket of 30-39years, others 21.40% were in the age bracket of 50-59years (Table 1). The mean age of the respondents was 45years. The result on marital status revealed that majority (61.20%) were married. On level of recorded education showed that most (29.10%) of the respondents had secondary education, while (27.20%) of them had primary school certificate, about 22.80% of them had tertiary education. Majority (52.90%) of the respondents lived in standard houses, while (41.70%) of them lived in substandard houses. It was also recorded that majority (60.10%) of the respondents had household sizes of 5-8

persons and a mean household size of 7 persons. Most respondents had farming experience between l0-20yeas while (68.40%) of the respondents were not owners of land, 19.41 % of the women used family land and 12.14% of them had their own land. The results also showed that most (79.20%) of the respondents had no extension contact, while 7.2% of them had contact once with extension agents. The mean income ₦49,750 of the respondents was recorded per month.

Table 1. Distribution of respondents according to their socio-economic characteristics

Variables	Frequency	Percentage	Mean
Age (years)			
20-29	23	10.80	
30-39	60	29.40	
40-49	65	31.50	45years
50-59	44	21.40	
60 &above	14	6.00	
Marital Status			
Married	126	61.20	
Single	47	22.80	
Divorced	14	6.80	
Widowed	19	9.20	
Education Status			
No formal Education	43	20.90	
Primary	56	27.20	
Secondary	60	29.10	
Tertiary	47	22.80	
Housing Status			
Standard	109	52.90	
Sub Standard	86	41.70	
Dilapidated	l l	5.30	
Household size			
1-4	**77**	37.40	
5-8	124	60.10	7 persons
Above **8**	5	2.50	
Farming experience			
l-10	106	51.50	20.20yrs
l l-20	65	J l.50	
2 l-30	3 l	15.50	
Above 30	4	2.00	
Sources of land			
Family land	40	19.4 l	
Owner	25	12.14	
Lease	141	68.40	

Variables	Frequency	Percentage	Mean

Member of functional group			
Yes	57	27.70	
No	149	60.67	
Extension Contact			
None	164	79.20	
Once	15	7.20	
2 times	7	5.30	
4 times	9	4.30	
Agriculture and related income/month (Nt)			
5000-15000	75	36.50	₦49750
l 6000-34000	68	32.60	
35000- 70000	59	29.20	
Above- 70000	4	2.00	

Types of agriculture and related activities

The result showed that majority of the respondents 74.27% were engaged in arable crops production, while 28.16% were involved in poultry production (Table 2).

Table 2. Distribution of respondents according to agriculture and related activities

Types of Agriculture and related activities	Frequency	Percentage (%)
Arable crop	153	74.27
Poultry production	58	28.16
Pig farming	28	13.59
Horticulture	9	4.37
Plantation agriculture	23	11.17
Fish farming	72	34.95
Provision of labour	78	37.86
Processing of agro products	74	35.92
Sales of agro products	138	66.99
Sales of agro inputs	65	31.55
Processing craft	24	11.65
Labourer	35	16.99

Types and sources of initiative and support according to their agricultural zones

Result showed the type of initiative and support accessed by farmers in the three different agricultural zones (Table 3). In Delta North, Delta Central and Delta South revealed that 32.52%, 35.43% and 30.58% of the respondent

got their micro credit through self help groups respectively.Government renders training while inputs were from self-help groups in the three different agricultural zones respectively.

Table 3. Distribution of types and sources of initiative and support according to their agricultural zones

Types	Sources	Delta North	Delta Central	Delta South
Micro credit	Self-help	67 (32.52)	73 (35.43)	63(30.58)
	NGOs	1 (0.00)	0 (0.00)	0 (0.00)
	Government	1 (0.00)	0 (0.00)	1 (0.00)
Training	Self-help	2 (0.00)	0 (0.00)	0 (0.00)
	NGOs	9 (4.37)	14 (6.80)	8 (3.88)
	Government	73 (35.43)	40 (19.42)	60 (29.3)
Input	Self-help	65 (31.55)	59 (28.64)	56 (27.18)
	NGOs	2 (0.97)	4 (1.94)	7 (3.39)
	Government	8 (3.88)	2 (1.94)	3 (1.46)

Figures in parenthesis are percentage

Women level of empowerment

Majority of the women had the ability to adequately feed their family (mean = 3.05), most of the women were able to plough back their capital back to their business without borrowing (mean= 2.88), able to train their children in school (mean= 2.83), capable of clothing their children (mean= 3.05) and majority also had the ability to purchase household utilities (mean = 2.89)as seen in Table 4. The empowerment index of 0.74% showed that 74% of the women were empowered. It is encouraged as the others whichbeing expected to be self empowered.

Table 4. Distribution of respondents according to their level of empowerment

Statements	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)	Score	Means
I am able to feed my family adequately	9(9)	24(48)	121 (363)	52 (208)	628	3.05
I am capable of clothing my children adequately	5(5)	24(48)	131 (393)	46(184)	630	3.05
I have ability to purchase my household utilities from my savings	5(5)	45(90)	122 (366)	34(136)	597	2.89
I have the ability to plough Backmy capital to business without borrowing	4(4)	48(96)	123 (369)	31(124)	593	2.88
I am able to train my children to school without borrowing	7(7)	58(116)	103 (309)	38(152)	584	2.83

Cut-off score= 2.50 (>2.50 = ability to; <2.50 inability to. Grand empowerment mean= 2.94 Empowerment index= 0.74

Constrains to agriculture and related activities faced by the women

Result revealed that majority of the women (70.39%) lacked adequate finance, 80.58% of them lack government assistance, 40.29% of them lacked access to good inputs, while 42. 72% of the rural women had problem of pest and diseases attack, 14.56% of the women had problem of insecurity, 11.2% of the women had problem of high cost of feed, while 2.9% of the women had problem of climate change (Table 5).

Table 5. Constraints to agriculture related activities faced by the women

Constraints	Frequency	Percentage
Lack of government assistance	166	80.58
Lack of adequate finance	145	70.39
Pest and diseases	88	42.72
Lack of good input	83	40.29
Insecurity	30	14.56
High cost of feed	22	11.20
Climate change	6	2.91

Contribution of the socioeconomic characteristics of rural women to choose agriculture and related activities

Result showed significantly ($p<0.059 = 0.05$) related between the women's choice of agriculture and related activities for empowerment and their socio-economic attributes (Table 6). $R^2(0.79)$ which implied that 79% variation in women choice of agriculture and related activities for economic empowerment is accounted for by socio-economic attributes which were age, house hold size, ownership of land and extension contact. Age was significant and negatively related to women's choice of agriculture and related activities for economic empowerment ($p\ 0.013<0.05$).

Table 6. Estimation of the contribution of socio-economic characteristics of rural women to choose agriculture and related activities for empowerment

Socioeconomic characteristics	t-value	Sig	Remark
Marital status	0.429	0.669	Not significant
Education level	-0.156	0.876	Not significant
Housing status	-1.086	0.279	Not significant
House hold size (HHS)	-0.671	0.032	Significant
Farming experience	0.826	0.410	Not significant
Land ownership	-2.591	0.010	Significant
Member of functional group	-0.460	0.646	Not significant
Extension contact	3.095	0.002	Significant
Age	-1.250	0.013	Significant

Differences in the sources of initiative and support among rural women in the three agricultural zones of Delta state

The data collected on the empowerment of rural women through agriculture and related activities in the three agricultural zones of Delta state showed significant difference ($p\ 0.001<0.05$) in the sources of initiative and supported among rural women in the three agricultural zones. The Duncan test result showed no significant difference between Delta North and Delta central but Delta north was significantly different from Delta south, while Delta central and Delta south were not significantly differed in their sources of initiative and support.

Contribution of sources of empowerment to women's level of empowerment

It revealed that self help sources of financial empowerment significantly contributed to the empowerment of women ($r = 0.629$, $df=203$) (Table 7).

Table 7. Contribution of sources of empowerment to women's level of empowerment

Variables	Level of empowerment	Self help	NGOs	Government
Level of empowerment	1.00	0.629	0.244	0.051
Self-help	0.629	1.000	0.369	0.562
NGOs	0.244	0.369	1.000	0.077
Government	0.651	0.562	0.077	1.000

Discussion

Socioeconomic characteristics of the respondents on age revealed that the mean age of the respondents was 45years. The implication revealed that most of the rural women involved in empowerment were between the ages of 30-50years indicating they were mostly in their youthful age and were strong enough to engage in agriculture related to income generating activities. Majority of the respondents (61.20%) on marital status were married. This means that majority of them had responsibilities as they were members of their households to take care. Once a person is married she has commitment to make provisions for his/her households. This is expected to be a push factor into self empowerment by the rural women. This is in line with Ekong (2003) who stated that married people often try to make ends meet in order to effectively care for their family.

The result on level of education suggested that majority of the rural women who were empowered that can read and write. Education is expected to help the rural women acquire more skills and knowledge to enable them to be self empowered. Education is also expected to help them in information access. This is in consonance with Odebode (2008) who stated that education is an essential factor for achieving desirable attitudinal change, improvement of skill and knowledge level of individuals.

The housing status of respondents revealed that most of the respondents were able to acquire good house for living. Housing status is one of the variables for determining living standard. Since the mean household size was 7 persons, it indicated that most household sizes in the study area were large. Due to the large size of their household; the respondents tended to work hard and become more involved in agriculture which related to activities to be able to empower and independent. Parents may find it difficult to cater for their household members. Jhigan (2011) suggested that large household population overshadows increased input. It made the women to seek self empowerment through agriculture related activities. The farming experience of the rural

women showed that they were able to source for initiatives and supportedwhich helping them increased their level of empowerment.

The result recorded on source of land showed that majority of the women in the rural areas did not own land. This is in consonance with Ukwoma *et al.*, (2013) that women found it difficult to gain access to valuable resources such as land, credit and agricultural inputs that will boost their production. One of the challenges women contend was inadequate land (Effiong, 2013). Olawoye (1989) suggested that loss of land affects women negatively with respect to their abilities to meet household needs. In many countries in the world women are unable to claim equal land and property regardless of leagal protections (world bank, 2019).

Extension contact with rural women in the study area was significantly poor. The inadequate population of agricultural extension workers in Nigeria and Delta state was the cause of the poor level of extension-farmer contact (Agbamu, 2006). Extension has a role to play in helping women to constitute themselves into functional groups where they can support to become self empowered. It showed that contact with extension worker can boost the women access to information about initiative and support for empowerment.

The income generated from agriculture and its related activities showed that most of the respondents could earn a living through getting involved in agriculture and their related activities thus economically empowered and independent. Good income from economic activities is a motivating factor sustaining people interest in such activities.

The types of agriculture and it related activities showed that arable crop productions are dominated by rural women. This is in consonance with Amusan *et al*, (2021) who found that women dominated and play a major role in the production of subsistence crops and livestock contributing about 65% to agricultural activities in Nigeria.This is also in line with Ekong (2006) who asserted that the major activity of rural women is concerned in food production. The result also showed that (66.99%) of the respondents were engaged in sales of Agro products while 35.92% were engaged in processing of agro products. In a similar study in india, Mahadeva and Keshavamurthy (2015) found that women were engaged in similar income generating activities in their efforts to empower themselves.

The women were mostly empowered through their various functional groups such as farmers association, farmer's cooperatives, among others. Ofuoku *et al.* (2008a) found that farmers subscribe to membership of farmers' groups in order to access in credit facilities and cheap inputs, among others.

The result on women level of empowerment showed that the empowerment index of 0.74% which was 74% of the rural women was

empowered. This agrees with Ovarhe (2015) who measured women empowerment with a different tool and also arrived at the same result that women can be self empowered through agricultural activities. This is also in congruent with Ekong (2008) who stated that women were the engine driving the economy of Nigeria and were the keys to develop and are importantly related to sustainable development goal. A suspected factor that leaded the women to be highly self-empowered is concerned their power to make decisions regading their household, economic, healthcare and participation in political and social activities (Mimma *et al.*, 2019).

The constraints to agriculture and related activities faced by the rural women had significantly affected their productivity and economical status. This implies that lack of adequate finance and lack of government assistance are seen by the rural women to be a very serious problem in a lack of good inputs for pest and diseases attack their crops. This is in consonance with Ofuoku (2017a) who found that the real smallscale farmers who really needed to be empowered were socially excluded from Governments agricultural programmes and initiatives. This is also in line with Ukwoma *et al.* (2013) who found that women is concerned more difficult to gain access to valuable resources such as land, credit, good inputs, extension training and services that will boost the capacity of their production. It is indicated that though they were empowered, and faced with constraints.

The contribution of socioeconomic characteristics of rural women to choose agriculture and related activities showed that a unit increase would most literally leaded to decrease in their tendency and choose agriculture and agriculture related activities for economic empowerment. The implication is concerned the older women werenot willing to choose agriculture and agriculture related activities for economic empowerment due to their fear of the risks which involved with agriculture and agriculture related enterprises. It is implicated for extension delivery as the current poor ratio of extension agent to farmer that may restrict their access to extension agents' encouragement. Ofuoku *et al.* (2008b) suggested that people become risk averse with age. Ownership of land was significant and negatively related as the coefficients had negative signs with women's choice of agriculture and related activities for economic empowerment (p0.010<0.05).Land ownership had a significant relationship with choice of agriculture and related activities for economic empowerment. It is decreased in women's access to land which had revealed the likelihood of leading to increase their choice of agriculture and related activities for economic empowerment and vice versa. The coefficient of land bore negative signed and it means an inverse relationship. It is revealed that women in protest will choose agriculture and related activities to access into the land.

House hold size had a significant and negative related with choice of agriculture and activities for economic empowerment (p0.032<0.05).

The coefficient of household size bore negative signs is decreased in household size that could lead to a unit increase in the decision of rural women to choose agriculture and related activities for empowerment. Large house hold size portended more people to cater for and vice versa. If the household size is small, women may not choose agriculture and related activities for empowerment, but if there is the likelihood that women with lower household sizes will more likely to choose agriculture and related activities. This is in consonance with Croppenstedt *et al.* (2003) who suggested that households that the larger are more likely to venture into other agriculture and related activities. Agriculture produces have long gestation period and may not be chosen by women with large household sizes who have many people to carter.

Extension contact has a significant relationship and positively related to women's choice of agriculture and related activities for economic empowerment. Itshowed that the more contact rural women with extension agents had more exposed them to access, initiative and support.Itcould eventually lead to high yield and the extension agents' persuasion to choose agriculture and related activities for empowerment. The extension agents freely give out relevant and necessary information that will persuade them to make such choices. Agbamu (2006) argued that farmers' behaviour change is influenced by extension contact. On the sources of initiative and support among rural women revealed that women had different or various sources of initiative and supportedto invest and become economically empowered.

The contribution of sources of empowerment to women's level of empowerment revealed that women empowerment was driven by the financial empowerment they accessed to help the groups. It affirmed the responses of the women as they asserted earlier and were mainly empowered through self-help. It implies that they were financially empowered to carry out their livelihood activities mainly through savings and functional groups. Mahadeva and Keshavamuty (2015) and Croppenstedt *et al.* (2003) who observedlack of access to source of credit, women resort to help themselves through personal savings and functional groups whosubscribed to their membership.

The study revealed that socioeconomic characteristics contributed to the women level of empowerment. There were significantly related between house hold size and level of empowerment because the larger the household size, the higher needed to source for initiative and support.Also, there were significant and negative relationship between ownership of land and extension contact was significant and had a positive relationship to sources of initiative and support. Age had a significant and positive relationship to sources of initiative and

support. There was a significant difference in the sources of initiative and support in the study areas. The level of empowerment of the rural women was high, adequately empowered economically through agriculture and related activities. Self help sources of financial empowerment are contributed significantly to the women level of empowerment. It is recommended that government should not only train the rural women but also provide microcredit, inputs and employ and post more extension workers to the rural areas. The women will be able to access information.Furthermore, women in rural areas can be empowered through agriculture and its related activities, through their collective initiative and support and collective purchase of inputs that can contribute to level of empowerment of women in rural areas.

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