

1 Assessment of Constraints to Participation of Rural Women in Technology Dissemination 2 of Women in Agriculture Program in Imo State, Nigeria

3 Abstract

4 The survey was conducted to identify constraints to participation of rural women in technology
5 dissemination of Women in Agriculture Program (WIA) in Imo State, Nigeria. Questionnaire
6 was used to collect data from a sample of 60 respondents. Data were analyzed using descriptive
7 statistics such as frequency, percentage and mean score. Results **showed** that 33.0% of the
8 respondents were aged between 41 and 50 years, majority (75.0%) were married, 88.0% had
9 formal education and 55.3% engaged in farming and trading, while 56.6% had a household size
10 of 6-10 persons. The respondents participated in the activities like processing and utilization of
11 food crops (16.7%), harvesting and storage of food crops (16.7%), dry season vegetable
12 production (13.3%), processing and utilization of livestock products (10.0%), processing and
13 utilization of soya bean into soya milk and soya meal (6.7%). The study **recommended** that rural
14 women should be encouraged to join co-operative societies in order to pull their resources
15 together. It also **highlighted** the need for promotion of rural women's activities through adequate
16 provision of credit facilities by government at all levels for optimum productivity.

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18 **Keywords:** Technology dissemination, Women participation, Rural women

19 Introduction

20 Agriculture has proven to be an important engine for growth and poverty reduction in
21 many countries of the world [1]. Women who operate at the subsistence level constitute the
22 major food producers in many of these countries. Rural women participate more than men; take
23 the lead in agricultural activities, consisting about 60-80 percent of the labor force [2].

24 Women make essential contributions to agricultural and rural economies in all the
25 developing countries [3]. They often manage complex households and pursue multiple livelihood
26 strategies. Roles performed by rural women vary considerably between and within regions and
27 are changing rapidly in many parts of the world, where economic and social forces are
28 transforming the agricultural sector. Women form the backbone of agriculture in Nigeria,
29 comprising the majority of agricultural laborers.

30 According to [4], women in Nigeria produce, process and market about 80% of food and
31 manage 70% of all small-scale enterprise. They play a vital role in food production and food
32 security in rural communities, accounting for 70% of agricultural workers, 80% of food
33 producers and 100% of those who process basic food stuff and undertaking 60% - 90% of the
34 marketing [5].

35 Women in rural areas are involved in rural development ranging from agriculture to
36 community development program. They perform farm operations thereby contributing a lot to
37 improving the economic and social status of their families and accelerating the pace of rural
38 development [6]. About 60% of agricultural operations like sowing seeds, transportation of farm
39 produce, winnowing, storage of grains, etc. are handled exclusively by women [7]. Women are
40 exceptionally responsible for sowing, weeding, transplanting, harvesting, processing, utilization
41 and storage of agricultural produce [8].

42 Rural women still lag behind in terms of extension contact, accessibility to training and
43 other indices of development education for agriculture [9]. It was in response to this situation
44 that the Women in Agriculture (WIA) program were introduced. Considering the important
45 economic roles played by women farmers, the Women in Agriculture (WIA) program was
46 introduced as a component of Agricultural Development Program (ADP) to empower women
47 farmers in acquiring knowledge and technical skills in the areas of planting materials, fertilizers,
48 chemicals, technical advice and credit facilities to enhance their profitability and increase income
49 so as to tackle food insecurity in Nigeria [10].

50 Access to improved production practices by women farmers leads to improved yields of
51 crops. Studies have shown positive correlation between use of extension recommendations by
52 farmers and crop yields which translates into increased income and improved quality of life of

53 farmers [11]. Technologies that can help enhance food production are meant to improve the
54 efficiency of women in agricultural production and enhance their productivity and expand the
55 areas they use for production. It gives them the opportunity to participate in their own income
56 generating activities and reduce drudgery usually associated with activities performed by them.

57 The improved technologies available to rural women through the WIA program included
58 milling machine, dried millers, frying machine, solar driers, poultry dispensers, palm oil pressing
59 machine, melon shelling machine, among others. Women farmers' competence to use of these
60 technologies could be enhanced through persuasion to adopt agricultural innovations by
61 transferring technology and knowledge from scientists to farmers which triggers development
62 [12].

63 Adoption of these innovations are often influenced by some factors such as age, level of
64 education, years of farming experience, cost of innovation, belief, values, culture, fear and
65 anxiety, poor access to formal credit facilities, poor access to market, among others. According
66 to [13], education is very essential in the development process. They reiterated that women's
67 access to education and training influences their production while lack of education and training
68 in basic skills contributes to the vicious circle of underdevelopment, negative adoption, low
69 productivity and poor conditions of health and welfare of women.

70 It therefore becomes pertinent to carry out this study to assess constraints to participation
71 of rural women in technology dissemination of Women in Agriculture Program (WIA) in Imo
72 State, Nigeria. The following research questions were pertinent for this study. What are the
73 socio-economic characteristics of women farmers? What are technologies disseminated by WIA
74 program for rural women? And what are constraints to participation of rural women in WIA
75 technologies.

76 **Purpose of the Study**

77 The broad objective of the study was to identify constraints to participation of rural women in
78 technology dissemination of Women in Agriculture (WIA) Program in Imo state, Nigeria

79 The specific objectives were to:

- 80 i. describe the socio-economic characteristics of the respondents;
- 81 ii. ascertain technologies disseminated by WIA program for rural women; and
- 82 iii. identify constraints to participation of rural women in WIA technologies.

83 **Methodology**

84 The study was conducted in Imo State, Southeast Nigeria. Mbaitoli Local Government
85 Area of the state was selected purposively for the study. It shares common boundaries with Orlu,
86 Njaba and Isu Local Government Areas in the North while its southern boundaries are shared
87 with Owerri North and Owerri West Local Government Areas. In the west and eastern
88 boundaries are Isiala-Mbano and Ikeduru Local Government Areas. The administrative
89 headquarters of Mbaitoli Local Government Area is Mbieri. It covers an area of 23km square
90 with a population of 237, 655 people [14]. Major occupation of the people in the area is farming.
91 Food crops such as yam, cassava and maize are produced in large quantities.

92 The population of the study comprised all registered women farmers in Mbaitoli Local
93 Government Area of the state. Multistage and random sampling methods were used to select
94 respondents for the study. Stage one involved the purposive selection of the local government
95 area because of proximity. Stage two involved the selection of six communities from the local
96 government area using a simple random sampling technique. The final stage was the random
97 selection of 10 women farmers from each of the six communities which gave a sample size of 60
98 respondents used for the study. Data for the study were obtained from primary source through

99 the use of structured questionnaire. Frequency, percentage and mean score were used for data
100 analysis.

101 **Results and Discussion**

102 Table 1 showed that 33.3% of the respondents were aged 41-50 years, about 28% were
103 aged between 51 and 60 years, among others. This implied that the respondents were middle
104 aged and in their productive years hence greater participation in activities of WIA program. This
105 will enable them to obtain additional income to be economically strong to take care of their
106 family responsibilities.

107 Majority (75.0%) of the respondents were married while about 18% were widowed,
108 among others (Table 1). This implied that the respondents had family members who are
109 dependents and required additional source of income in order to meet up with their household
110 needs.

111 A greater percentage (88.3%) of the respondents had formal education in school while
112 11.7% did not have formal education (Table 1). This showed that majority of the respondents
113 were literate which will enable them to accept the use of technologies disseminated by WIA
114 program. This is in line with the findings of [15] which stated that women's access to education
115 and training influences their production while lack of education and training in basic skills
116 contributes to the vicious circle of underdevelopment, negative adoption, low productivity and
117 poor conditions of health.

118 Results in Table 1 showed that 56.6% of the respondents had a household size of 6-10
119 persons while 21.7% had 11-15 persons, among others. This implied that the respondents had
120 fairly large household size which could be a source of labor used in the activities of WIA
121 program.

122 Entries in Table 1 showed that 56.6% of the respondents had a farming experience of 11-
123 20 years, 31.6% had between 1 and 10 years while 11.8% had above 20 years. This implied that
124 the respondents have been farming for a long period of time which could enable them to acquire
125 experiences that will help to boost their productivity in WIA program.

126 Table 1 show that 73.3% of the respondents had a farm size of <1 hectare while 26.7%
127 had between 1 and 3 hectares. This implied that the respondents had small portions of farm land
128 and practice at a subsistence level.

129 About 55% of the respondents had farming and trading as their primary occupation,
130 26.2% were engaged in farming, 11.8% were petty traders while 6.7% were civil servants (Table
131 1). This implied that the respondents were involved in farm and non-farm occupations. This is to
132 enable them to be economically empowered to meet up with their family needs.

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138 **Table 1: Distribution of respondents according to socio-economic characteristics (n=60)**

Socio-economic characteristics	Frequency	Percentage
Age (years)		
21 – 30	2	3.3
31 – 40	18	30.0
41 – 50	20	33.3
51 – 60	17	28.4
Above 60	3	5.0
Marital status		
Single	2	3.3
Married	45	75.0
Widowed	11	18.4
Divorced	2	3.3
Level of education (years)		
Non-formal education	7	11.7
Primary education	35	58.3
Secondary education	14	23.3
Tertiary education	4	6.7
Household size (numbers)		
1 – 5	12	20.0
6 – 10	34	56.6
11 – 15	13	21.7
Above 15	1	1.7
Farming experience (years)		
1- 10	19	31.6
11 – 20	34	56.6
Above 20	7	11.8
Farm size (hectares)		
< 1	44	73.3
1-3	16	26.7
Primary occupation		
Farming	16	26.2
Petty trading	7	11.8
Civil service	4	6.7
Farming and trading	32	55.3

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141 Technologies Disseminated through WIA Program for Rural Women

142 The respondents indicated the use of the following technologies disseminated by WIA
 143 which include processing and utilization of food crops (16.7%), value addition of crops (8.3%),
 144 processing and storage of food crops and livestock (6.7%), dry season vegetable production
 145 (13.3%), harvesting and storage of food crops (16.7%), processing and utilization of livestock
 146 (10.0%), processing and utilization of soya bean into soya milk and soya meal (6.7%), making of
 147 soap, pomade and detergent (5.0%) (Table 2). This showed that the respondents were involved
 148 in the activities which can generate income for economic empowerment. The finding agreed with
 149 a study carried out by [16] which reported that farmers participated in WIA program because it
 150 helped them to acquire more skills on agriculture in addition to providing support services.

151 **Table 2: Distribution of respondents according to technologies disseminated by WIA**
 152 **Program for Rural Women (n= 60)**

Technologies	Frequency	Percentage
Processing and utilization of food crops	10	16.7
Processing and utilization of livestock products	6	10.0
Processing and storage of food crops and livestock products	4	6.7
Dry season vegetable production	8	13.3
Harvesting and storage of food crops	10	16.7
Food and nutrition training	3	5.0
Making of soap, pomade and detergent	6	10.0
Value addition of crops	5	8.3
Processing and storage of fresh tomatoes into paste	2	3.3
Processing and utilization of soya bean into soya milk and soya meal	4	6.7

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154 **Constraints to Participation of Rural Women in WIA Technologies**

155 Results in Table 3 showed constraints to participation of rural women in WIA
 156 technologies which included high cost of farm inputs (M= 3.17), lack of funds (M= 3.10), poor
 157 communication between women farmers and WIA officials (M= 3.02), poor access to land (M=
 158 3.00), inadequate processing and storage facilities (M= 3.00), weak extension service delivery
 159 (M= 2.80), increase in family responsibilities and pressure on women (M= 2.78), , poor training
 160 activities of WIA program (M= 2.63), illiteracy (M= 2.60) and poor road network (M= 2.52).
 161 The finding is in line with [17] who noted that lack of funds and high cost of agricultural inputs,
 162 among others limit the effectiveness of Women in Agriculture (WIA) program in Enugu State.
 163 Lack of commitment by WIA officials, lack of encouragement, lack of storage facilities and high
 164 cost of labor hinder effective participation of rural women in WIA program [18].

165 **Table 3: Constraints to participation of rural women in WIA technologies**

Constraints	Mean Score
Lack of funds	3.10
High cost of farm inputs	3.17
Poor access to land	3.00
Inadequate processing and storage facilities	3.00
Weak extension service delivery	2.80
Illiteracy	2.60
Poor road network	2.52
Increase in family responsibilities and pressure on women	2.78
Poor communication between women farmers and WIA officials	3.02
Poor training activities of WIA program	2.63

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169 **Conclusion and Recommendations**

170 The study indicated that the respondents were middle aged, married, literate and in their
171 productive years. The respondents were engaged on the use of technologies disseminated by
172 WIA program which **enabled** them to obtain additional income for economic empowerment.
173 They were highly constrained by high cost of farm inputs, lack of funds, poor communication
174 between women farmers and WIA officials, poor access to land, inadequate processing and
175 storage facilities and weak extension service delivery.

176 The study **recommended** that rural women should be encouraged to join co-operative
177 societies in order to pull their resources together. There **arose** the need for promotion of rural
178 women's activities through adequate provision of credit facilities by government at all levels to
179 enhance increase in production.

180 **ETHICAL ISSUES**

181 **Authors have declared that no ethical issues exist.**

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