

1 **Assessment of Constraints to Participation of Rural Women in Technology Dissemination** 2 **of Women in Agriculture Programme 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 Programme (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 show 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 recommends that rural
14 women should be encouraged to join co-operative societies in order to pull their resources
15 together. It also highlights the need for promotion of rural women's activities through adequate
16 provision of credit facilities by government at all levels for optimum productivity.

17

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 many
21 countries of the world [1]. Women who operate at the subsistence level constitute the major food
22 producers in many of these countries. Rural women participate more than men; take the lead in
23 agricultural activities, consisting about 60-80 percent of the labour force [2].

24 Women make essential contributions to agricultural and rural economies in all the developing
25 countries [3]. They often manage complex households and pursue multiple livelihood strategies.

26 Roles performed by rural women vary considerably between and within regions and are
27 changing rapidly in many parts of the world, where economic and social forces are transforming
28 the agricultural sector. Women form the backbone of agriculture in Nigeria, comprising the
29 majority of agricultural laborers.

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

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

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

49 Access to improved production practices by women farmers leads to improved yields of crops.
50 Studies have shown positive correlation between use of extension recommendations by farmers
51 and crop yields which translates into increased income and improved quality of life of farmers
52 [11]. Technologies that can help enhance food production are meant to improve the efficiency of

53 women in agricultural production and enhance their productivity and expand the areas they use
54 for production. It gives them the opportunity to participate in their own income generating
55 activities and reduce drudgery usually associated with activities performed by them.

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

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

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

75 **Purpose of the Study**

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

78 The specific objectives were to:

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

82 **Methodology**

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

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

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

100 **Results and Discussion**

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

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

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

116 Results in Table 1 show that 56.6% of the respondents had a household size of 6-10 persons
117 while 21.7% had 11-15 persons, among others. This implies that the respondents had fairly large
118 household size which could be a source of labour used in the activities of WIA programme.

119 Entries in Table 1 show that 56.6% of the respondents had a farming experience of 11-20 years,
120 31.6% had between 1 and 10 years while 11.8% had above 20 years. This implies that the

121 respondents have been farming for a long period of time which could enable them to acquire
122 experiences that will help to boost their productivity in WIA programme.

123 Table 1 show that 73.3% of the respondents had a farm size of <1 hectare while 26.7% had
124 between 1 and 3 hectares. This implies that the respondents had small portions of farm land and
125 practice at a subsistence level.

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

130

131

132

133

134

135 **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

136

137

138 **Technologies Disseminated through WIA Programme for Rural Women**

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

148 **Table 2: Distribution of respondents according to technologies disseminated by WIA**
 149 **Programme 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

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

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

162 **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 programme	2.63

163

164

165

166 **Conclusion and Recommendations**

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

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

177 **References**

- 178
179 1. Imonikebe BU. Constraints to rural women farmers' involvement in food production in
180 Nigeria. *African Research Review*. 2010; 4(3): 281-288.
- 181
182 2. Singh S. *Contract Farming in India: Impacts on Women and Child Workers*. International
183 Institute for Environment and Development, Gatekeeper Series, No. 111, London. 2003.
- 184
185 3. Food and Agriculture Organization (FAO). *The Role of Women in Agriculture*.
186 Agricultural Development Economics Division ESA Working Paper No. 11-02. 2011; 1-
187 48.
- 188
189 4. Auta SJ. *Performance of women groups in agricultural activities in kaduna State*.
190 Unpublished Ph. D Thesis, Department of Agricultural Economics and Rural Sociology,
191 Ahmadu Bello University, Zaria.2004.
- 192
193 5. Obiora CJ. *Need assessment: Overview from women farmers in Anambra State,*
194 *Nigeria*. *Greener Journal of Agricultural Sciences*. 2013; 3(8): 618-622.
- 195
196 6. Singh S. *Contract Farming in India: Impacts on Women and Child Workers*. International
197 Institute for Environment and Development, Gatekeeper Series, No. 111, London. 2003.

- 198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
7. Agarwal M. Economic Participation of Rural Women in Agriculture. Empowerment of Rural Women in India. 2003.
 8. Mgbada JU. Production of staple crops by rural women in Enugu states, lessons for enhancing poverty alleviation programmes. In: Idowu T.A (Eds.), Agricultural Extension and poverty alleviation in Nigeria, Proceedings of the Agricultural Extension Society of Nigeria. 2002.
 9. Tologbonse EB, Jibrin MM, Auta SJ, Damaisa MA. Factors influencing women participation in Women in Agriculture (WIA) Programme of Kaduna State Agricultural Development Programme. International Journal of Agricultural Economics and Extension. 2013; 1(7): 47-54.
 10. Umeh OJ, Nwachukwu I. Revamping grassroots agricultural production through the Agricultural Extension Transformation Agenda. 2015; 2-7.
 11. African Rice Centre. Commodity watch: NERICA contributes to record rice harvest in Africa. New Agricultural Digest Abuja. 2007; 16-18.
 12. Agbamu JU. Essentials of Agricultural Communication in Nigeria. Malthouse Press Limited, Lagos. 2006; 65-73.
 13. Aniedu C, Aniedu OC. Gender mainstreaming in Agricultural development in Nigeria. In: Agricultural extension and rural development. Nwachukwu (ed.) Lamb House Publisher, Umuahia. 2013.
 14. National Population Commission (NPC). National Population Census Projected Figure for Delta state. National Population Commission Publication, Abuja, Nigeria. 2006.
 15. Aniedu C, Aniedu OC. Gender mainstreaming in Agricultural development in Nigeria. In: Agricultural extension and rural development. Nwachukwu (ed.) Lamb House Publisher, Umuahia. 2013.
 16. Ladele AA. Dynamics of agricultural extension service structure and policy: the need for group extension in sustainable agricultural technology transfer in Nigeria. In: S.Q. Afolayan and I.A. Akinbode. (Eds.), Proceedings of the Inaugural Conference of the Agricultural Extension Society of Nigeria. 1994.
 17. Nwaoha C. Evaluation of Women in Agriculture Programme of Imo State Agricultural Development Programme. Case study of Owerri Agricultural Zone of Imo State. Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria. 2008.

- 243 18. Nwogu CN. Assessing the impacts of Women in Agriculture component of ADP on
244 female farmers in Umuahia agricultural zone of Abia state, Nigeria. Michael Okpara
245 University of Agriculture, Umudike, Umuahia, Abia State, Nigeria. 2008.

UNDER PEER REVIEW