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RURAL WOMEN'S PERCEIVED EFFECTIVENESS OF *FADAMA* III FACILITATORS' DISSEMINATION OF ON AND OFF-FARM TECHNOLOGIES IN EDO STATE NIGERIA

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ABSTRACT

The Third National Fadama Development Programme (Fadama-III) aimed at the inclusion of rural women in recognition of their multiple and pivotal roles in household food, nutrition and health (HHFNH) security. However, constraints rooted in corruption and unethical practices could have limited achievement. This study therefore examined rural women's perception of effectiveness of HHFNH technologies disseminated by Fadama-III Facilitators in Edo State. The sample comprised seventy five (75) women Fadama Users' Group (FUG) members drawn through a multistage process. Data were collected through the administration of a well structured interview schedule and analysed using descriptive statistics while Pearson's correlation was used to test the hypotheses. Majority of the women were between 31 and 50 years (65.4%), married (74.7%) and family size of 9-12 persons (68.0%) and 48.0% had no formal education. Facilitators were perceived to be effective in dissemination of several on- and off-farm but more in on-farm technologies including those on storage ($\bar{x}=3.60$), pest and disease management ($\bar{x}=3.57$), harvesting ($\bar{x}=3.53$), HIV/AIDS awareness ($\bar{x}=3.29$), personal hygiene, water treatment ($\bar{x}=3.28$) and vegetable consumption ($\bar{x}=3.28$). Family size ($r=0.234$), cooperative membership ($r=0.258$), farming experience ($r=0.170$) and annual income ($r=0.248$) had significant relationships with perceived effectiveness of facilitators in technology dissemination at 5% level. Most of the serious constraints to optimising benefits were related to credit and other inputs access which are rooted in corruption and sharp practices such as short changing beneficiaries ($\bar{x}=3.61$), disbursement to non-farmers and fictitious Fadama Users' Groups ($\bar{x}=3.61$) and fraudulent group registration ($\bar{x}=3.54$). Continuous capacity building for facilitators and rural women and programme monitoring and supervision are recommended to optimize and sustain the benefits of Fadama-III users' group membership.

Keywords: Perceived effectiveness, on- and off-farm technologies, constraints, rural women

INTRODUCTION

It is estimated that of the 1.20 billion hungry and poor people in the world over 800 million suffer from chronic undernourishment. Out of these 34 million live in Asia while 186 million live in Sub-Saharan African (Daudu and Madukwe, 2012). Major challenge facing developing countries in the world is the production of sufficient food for its burgeoning population (Nwosu, 2005). According to Food and Agriculture Organisation (FAO) (1996), the intervention in the food deficit situation through agricultural programmes during the late 1970s and early 1980s led to a significant improvement in production throughout the 1990s. However, the increased aggregate food production has not necessarily translated into improved household food security.

Food security refers to when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996) Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Idachaba, 2006)

Nutrition security thus requires that household member have access not only to food, but also to other requirement for a healthy life such as health care, a hygienic environment and knowledge of

personal hygiene (International Fund for Agricultural Development, 2006). Nutrition is the foundation for health and development upon which all the Millennium Development Goals (MDGs) now the Sustainable Development Goals (SDGs) depend (FAO, 2000)

Various infections, notably diarrhoea and respiratory diseases, measles, malaria, intestinal parasites and infection with Human Immunodeficiency Virus (HIV/AIDS) have a major impact on nutritional status. The interaction of infection and inadequate food consumption causing growth retardation in children leads to a vicious cycle, the mal-nutrition – infection complex (FAO, 2006). To break the cycle, it is necessary to improve environmental health conditions by addressing problems of contaminated water, disposal of human excrete and household wastes, and poor food and personal hygiene in homes and places of food processing and marketing.

Women play an important role in food security and the economic well being of farm families (Adekanye, Otitolaiye and Opaluwa, 2009). In individual households; food security is a daily concern of consumption and intra household resource allocation. Women's multiple role in food production including home gardening, subsistence fishing, marketing, fish processing and informal food selling are resource seeking tasks that contribute to the household food basket (Balakrishnan, 2006).



Despite women's population and level of involvement in agriculture, they are constrained to optimize their potentials by factors such as inadequate labour saving technologies, limited access to land and other resources, inadequate involvement in decision making, poor education, poor access to inputs and credits (Jiggins, Samanta and Olawoye 1997; Adisa and Okunade, 2005). It is on this note that various programmes including *Fadama-III* were implemented to address the needs of women and enhance their role performance through the dissemination of technologies by the facilitators or extension agents.

The Third National Fadama Development Programme (NFDP-III) was designed to sustainably increase the incomes of Fadama users, reduce poverty, increase food security and contribute to the achievement of MDGs. The rural poor: crop farmers, pastoralists, fisherfolk, traders, processors, hunters, gatherers, other economic interest groups (EIGs), vulnerable groups: widows, handicapped, youths, PLWHIV/AIDS and service providers are to benefit.

The facilitator is the link between the Fadama development project management and beneficiaries. They disseminate technologies/information to the farmers to achieve set objectives. According to Etzioni (1976), the actual effectiveness of a specific organisation is determined by the degree to which it realizes its goals. Effective facilitation is a critical element to the overall success of any programme. Its main purpose is to contribute to the sustainability of the programmes (Third National Fadama Development Project, 2009). According to IFAD (2006), women's empowerment through facilitators who are responsible for the dissemination of technologies do not only benefit the women themselves but also their families and communities. They mobilize women and reach out to them in groups. Obinne (2002) noted that women naturally like to meet and learn something new in groups. They are usually the target population for the household food, nutrition and health security of agricultural programmes because of the pivotal role they play.

It is a truism that corruption is not a new phenomenon, what is new and worrisome is the magnitude and forms it has taken (Fadairo and Ladele, 2014). The issue of corruption is so serious that no initiative whether on food security or poverty alleviation or anything else for that matter will work in the absence of ethical public behaviour. In Nigeria, it is one of the many unresolved problems (Ayobolu, 2006) that have critically hobbled and skewed development including *Fadama III*. The programme could not be said to have optimized potentials or effectively addressed the technology needs of the women with

respect to household food, nutrition and health as there are still traces of poverty, malnutrition, diseases and even mortality. Ozowa, (1995) posited that ineffective dissemination of technologies and/or the constraints to programme effectiveness could be attributed to ineffective facilitation and inadequate facilitators for the dissemination of technologies. The effectiveness of the facilitators to adequately deliver and implement the expected activities could make or mar their effectiveness at imparting on the women.

It is against this background that the study assessed facilitators' effectiveness in dissemination of food, nutrition and health related technologies and the corruption induced constraints in *fadama-III* programme. Specifically the study:

1. described the socio economic characteristics of the rural women in Edo state,
2. identified the food, nutrition and health technologies disseminated by the Facilitators of NFDP-III,
3. assessed rural women's perception of effectiveness of facilitators in the delivery of food, nutrition and health related technologies/information to them, and
4. identified rural women's perceived corruption induced constraints to optimizing benefits from the technologies disseminated by NFDP-III.

METHODOLOGY

Edo State, Nigeria has tropical climate with two distinct seasons; dry and wet seasons. The major crops cultivated in the state include both cash and food crops like yam, rubber, oil palm, cocoa, cassava, melon and maize. A multistage process was used to draw a sample of seventy five (75) women who participated in the Third National Fadama Development Programme (NFDP-III). Firstly, the three (3) agro-ecological zones: Edo South, Edo Central and Edo North. Random selection of one Local Government Area per agro-ecological zone followed by selection of five (5) Fadama Users' Groups (FUGs) per LGA to give a total of fifteen (15) FUGs. Finally, five (5) women were randomly selected per FUG making a total of 25 women per LGA and 75 women for the 3 LGAs.

Data were obtained with structured questionnaire and analysed using descriptive and inferential statistics; mean scores and frequency counts as well as Pearson's Product Moment Correlation (PPMC) was used.

Perception of effectiveness in technology dissemination was measured for 21 on-farm and 35 off-farm items generally disseminated information/technologies using a 5 point Likert type scale; highly effective, very effective, effective, little effective and not effective with scores 5,4,3,2 and 1 respectively. Mid point=3, ≥ 3 =effective. Minimum score=56, maximum=285.



Corruption-induced constraints was obtained using a 4 – point Likert scale; very very serious, serious, little serious, and not serious with scores 4,3,2 and 1, respectively for Mid point=2.5, ≥2.5=serious.

RESULTS AND DISCUSSION

Socioeconomic Characteristics

Table 1 shows that majority of the women were between 31 and 50 years (65.4%) which indicates that most of the respondents were in their middle age, active’ Majority were married (74.7%) which concurs with the findings of Akwiwu, Nwajiuba and Nnadi (2005). High proportion of the respondents had family size of 9-12 persons (68.0%) while 48.0% had no formal education which suggests that Household Food, Nutrition and Health Security technologies will be necessary for the women via extension services. Income of majority was N200,400,000 (mean=N282,000) an indication of above minimum wage of N204,000 in Nigeria and ability of most of the *Fadama*-III beneficiaries to live above US dollar \$1 per poverty line (World Bank,2002; National Bureau of Statistics, 2010).

Table 1: Socio-economic characteristics of respondents

Variables	Frequency	Percent	Mean
Age (years)			
30 & below	5	6.7	
31-40	17	22.7	
41-45	32	42.7	
>50	21	28.0	
Marital status			
Single	7	9.3	
Married	56	74.7	
Widowed	10	13.3	
Divorced	2	2.7	
Family size			
1-4	8	10.7	
5-8	16	21.3	8.9
9-12	51	68.0	
Educational qualification			
No formal education	36	48.0	
Primary education	23	30.7	
Secondary education	11	14.7	
Tertiary education	5	6.7	
Cooperative membership			
<2 cooperative	28	37.3	
3< cooperative	47	62.7	
Farming experience (years)			

Variables	Frequency	Percent	Mean
5 & below	33	44.0	
6-10	29	38.7	
11-15	10	13.3	7.83years
>15	5	4.0	
Annual income (N)			
100,000-	15	20.0	
200,000			
200 001-	51	68.0	N282,000
400,000			
>400,000	9	12.0	

Source: Field Survey, 2012

Perceived facilitators’ effectiveness

Table 2a shows that facilitators were perceived to be effective in the dissemination of technologies related to pest and disease management (Mean = 3.47), routine management (Mean= 3.48) and storage (Mean = 3.60). Although this is finding is contrary to the assertion of Agbam, (2005) and finding of Ejechi, (2015) that the problems of agriculture are as a result of insufficient and ineffective extension services to farmers in general and women farmers in particular but consistent with FAO (1993) in which the facilitators were effective in pest control. Also values from Tables 2a and 2b show that facilitators were perceived to be more effective in on- farm than off- farm technologies.

Table 2a: Perceived facilitators’ effectiveness in on-farm activities

Technologies disseminated	NFDLP	
	Mean	Std. Dev
Crop		
Site selection for Crops	2.93	1.018
Land preparation for Crops	2.97	.972
Marking/pegging out Farm	2.67	1.256
Planting techniques	3.35*	.626
Improved plant varieties	3.45*	.501
Weeding	3.35*	.557
Pest and disease management	3.47*	.502
Fertiliser type	3.39*	.543
Fertiliser application	3.35*	.647
Harvesting	3.35*	.647
Storage	3.45*	.501
Marketing	2.99	1.046
Livestock		
Construction of pens	2.80	1.127
Animal/Improved species	2.91	1.055
Diagnosis of sick animals	3.07*	.963
Formulation of feed	2.83	1.143
Feeding	3.24*	.786
Pest and disease control	3.45*	.527
Periodic management	3.45*	.552
Routine management	3.48*	.529
Marketing	3.11*	1.021



Source: Field survey, 2012.

**Effective (mean ≥ 3.00)*

Table 2b shows that facilitators were effective in packaging (Mean = 3.04), drying (Mean=3.13), organic farming (Mean=3.21), vegetable consumption (Mean=3.28), HIV/AIDS awareness (Mean=3.29), personal hygiene (Mean=3.28) which is an indication that most household nutrition and health technologies/non economic technologies were not well emphasized. This is contrary to Koyenikan and Omoregbee, (2011) that the problems of agriculture are as a result of insufficient and ineffective extension services to women farmers.

Table 2b: Perceived facilitators' effectiveness in off-farm activities

Technologies disseminated	NFDLP	
	Mean	Std. Dev
Value addition		
Packaging	3.04*	.706
Flavouring	2.19	.996
Fortification	2.25	1.140
Modification	1.99	1.046
Storage / preservation techniques		
Drying	3.13*	.528
Freezing	3.01*	.647
Airtight	1.99	1.145
Heating	3.03*	.615
Fermenting	2.65	.893
Chemical storage	2.12	1.052
Smoking	3.03*	.697
Nutrition		
Food enrichment	2.57	.989
Home gardening	2.76	.898
Organic farming	3.21*	.444
Supplementary feeding		
Vegetable consumption	3.28*	.481
Fruit consumption	3.16*	.616
Soybeans utilisation	2.16	.594
Processing techniques	3.03*	.592
Utilisation	2.85	.833
Food combination	2.19	1.087
Health		
HIV/AIDS Awareness	3.29*	.487
Adequate feeding	3.23*	.509
Personal hygiene	2.03	.944
Stigmatization/confidentiality	3.19*	.485
Prevention and control	3.24*	.541
Sex education	2.61	.985
Care giving	3.23*	.452
Sanitation	3.27*	.528
Hygiene		
Personal hygiene	3.28*	.452
Water treatment	3.28*	.452
Food treatment	3.27*	.475
Environmental sanitation	2.44	.740

Technologies disseminated	NFDLP	
	Mean	Std. Dev
Reproductive issues		
Teenage pregnancy	2.07	.664
Sex education	2.35	1.109
Child spacing	2.53	.920

Source: Field Survey, 2012.

**Effective (mean ≥ 3.00)*

Perceived constraints to optimising benefits from *Fadama III* by rural women

Table 3 shows that the most serious constraints perceived by the women to optimising benefits related to credit and other inputs accessed. A critical look at these constraints (as indicated on the table with **), show that they are rooted in sharp, corrupt and unethical practices which include reduction in credit accessed/short changing beneficiaries (\bar{x} =3.61), disbursement to non farmers and fictitious *Fadama Users' Groups* (\bar{x} =3.61), fraudulent group registration (\bar{x} =3.54), undue bureaucracy for tips (\bar{x} =3.51), elite domination/influence peddling (\bar{x} =3.49), favouritism and discrimination (\bar{x} =3.49), dereliction of duty (\bar{x} =3.37), acquisition of sub standard facilities and equipment (\bar{x} =3.37), supply low quality inputs (\bar{x} =3.37). Fraudulent group registration, bureaucratic conflict of interest, nepotism and influence peddling concur with the findings of Anderson (2002) as forms of corruption in Sweden.

Table 3: Perceived constraints to optimising benefits from *Fadama III* by rural women

Constraints	Mean	SD	Rank
**Shortfalls in credit accessed/short changing beneficiaries	3.61*	.432	1 st
**Disbursement to non farmers and fictitious <i>Fadama Users' Groups</i>	3.61*	.151	1 st
**Fraudulent group registration	3.54*	.601	3 rd
**Undue bureaucracy for tips	3.51*	.236	4 th
**Elite domination/influence peddling	3.49*	.423	5 th
**Favouritism and discrimination	3.49*	.256	6 th
**Dereliction of duty by facilitators	3.37*	.390	7 th
**Acquisition of sub standard facilities and equipment	3.37*	.238	8 th
**Supply of low quality inputs	3.33*	.408	9 th
No time to attend women meetings	1.84	.239	10 th



Source: Field Survey Data, 2012 *serious constraints (Mean \geq 2.50) **corruption related

Relationship between socio economic characteristics of respondents and perceived facilitators' effectiveness

Table 4 shows the correlation between the perceived facilitators' effectiveness in technologies dissemination and selected variables. Family size of respondents ($r = 0.0234$; $P < 0.050$), cooperative membership ($r = 0.258$; $P < 0.050$), farming experience ($r = 0.170$; $P < 0.050$) and annual income ($r = 0.248$; $P < 0.050$) had significant relationship with perceived facilitators' effectiveness in technology dissemination. This implies that women with larger farms, more years of farming experience, cooperative membership and higher income perceived facilitators to be effective in the technology dissemination. It could imply that the women feel they benefited from the services .

Table 5: Relationship between the socio economic characteristics of respondents and perceived facilitators' effectiveness of technologies disseminated

Variables	Correlation coefficient (r)	p-value
Age (years)	0.143	0.081
Family Size (ha)	0.234*	0.007
Educational	0.048	0.556
Cooperative member (no.)	0.258*	0.001
Farming experience (year)	0.170*	0.037
Annual income (N)	0.248*	0.002

*Significant at the 5% level ($p < 0.050$)

Source: Field Survey Data, 2012

CONCLUSION

The study concludes that women perceived *Fadama* III Facilitators to be effective in more crops and livestock on-farm technology dissemination than in off-farm technologies. Constraints which hindered women from benefiting optimally from the programme revolved around capital and other inputs. Women with large family size, more cooperative membership, long years of farming experience and higher annual income perceived the facilitators to be effective.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Facilitators should ensure adequate linkage to credit/sources of funding and mobilization of resources within FUGs. Ensure that women have access to quality inputs and services

especially after NFDP closure for sustainability of groups.

2. Programme monitoring and supervision should be ensured to prevent corrupt practices in the programme,
3. Continuous capacity building for facilitators in off-farm technologies and consequently update and upgrade technical skills of women in order to optimize and sustain the benefits of *Fadama-III* users' group membership
4. Sensitization of programme staff, women beneficiaries and other stakeholders on the ills of corruption and related practices.

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