Effective Participation in Intervention Projects: An Evaluation of Farmers' Participation in NEWMAP Livelihood Enhancement Activities

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Abstract

This study assessed farmers' effective participation and sustainability of NEWMAP project in Southeast Nigeria. Primary data were collected from a total of three hundred and sixty (360) respondents. Objectives were realized using descriptive statistics. The results showed that the beneficiaries' needs were satisfied by NEWMAP activities; such as enhanced their crop farming technical knowledge, enriched their livestock farming experience, and improved their leadership roles. Also, the respondents participated actively in various activities of NEWMAP project in the areas of needs assessment and prioritization, projects planning and design, sensitization meetings, rainwater harvesting activities, baseline survey activities, among others. The mean crop yields obtained before and after the project were 8.291 and 8.747 for maize, 9.042 and 9.917 for cassava, and 6.653 and 8.194 for yam. Also, the result showed that positive and significant relationship exists between the respondents' perception and participation at 5% level of significance. The test of significance indicated that significant difference exists between perception and participation in NEWMAP livelihood activities with t-value of 8.1349. Based on the findings, the study recommended that prompt payments of funds by federal and state governments should be ensured for sustainability of the project and sustenance of the beneficiaries' interest.

Keywords: Farmers, Participation, Sustainability, Livelihood, NEWMAP .

Introduction

The Nigeria Erosion and Watershed Management Project (NEWMAP) is an eight-year state-led erosion and land degradation intervention project executed in 21 participating states in Nigeria. The project which started in 2012, ended in June 2021 with one-year additional financing. The project was funded by the World Bank (WB), Global Environment Facility (GEF), Special Climate Change Fund (SCCF) and Federal Government of Nigeria (FGN) (GEF, 2012). It was implemented by Federal Ministry of Environment, states, line ministries, departments and agencies (MDAs) alongside civil society organizations (CSOs) and local communities in sub-catchments areas (Chukwu *et al.,* 2022). The development objective of NEWMAP was to mitigate the long-term erosion risk in specific areas and repair damaged lands. Project management, institutions and information services, the climate change agenda, and managing erosion and watersheds are the four main components of the project (Chukwu *et al.,* 2022). The livelihood enhancement activities were implemented under component one with the exclusive goal of improving the socioeconomic conditions of the project's beneficiaries and lowering poverty.

Participation in project activities is a vital issue for rural development projects (Ojemade *et al.,* 2020; Osuafor & Anarah, 2015). According to Ozor *et al.* (2015), engaging rural farmers in programs for rural development requires mobilizing them to participate actively in the program. When planning any programs related to the requirements of farmers, participation must be given top priority (Akpan *et al.,* 2020). Adjei *et al.* (2017) noted that rural farmers defy change until they are completely incorporated into the program,

where their needs and ambitions are prioritized. Realization of these changes can be facilitated by active participation of the beneficiaries from planning to implementation. In the opinion of Osuafor *et al.* (2018) and Nwaniki (2007), one of the forces impeding food production and food security in developing countries despite numerous intervention projects has been the lack of engagement of the project beneficiaries in the planning and implementation of project activities. By implication, food security cannot be achieved without active participation of the beneficiaries of such programmes at both the planning and implementation phases (Obianefo *et al.,* 2022; Osuafor *et al.,* 2020; Azubugwu & Osuafor, 2019). Fieldsend *et al.* (2021) assessed agricultural knowledge and innovation systems among farmers and foresters the types of innovation challenges tackled, solutions proposed, innovation supported, parameters of factor participation and the expectations of success.

One recently finished initiative that had a significant impact on the beneficiaries' quality of life was NEWMAP. By actively participating in viable livelihood options for income production, poverty reduction, and wealth creation, the NEWMAP beneficiaries' socioeconomic conditions were to be improved through the livelihood enhancement activities (Chukwu *et al.,* 2022). But, the extent of success recorded by NEWMAP to this improvement has happened in Southeast Nigeria is not yet known. Thus, the study addressed the following research questions: What is the perception of the respondents about NEWMAP efforts to improve livelihoods? What is the level of participation of the respondents in different stages of NEWMAP activities? What is the estimated output before and after the beneficiaries' participation in the project activities?

Hence, the aim of this study was to assess effective participation and sustainability of intervention projects in relation to farmers' participation in Livelihood Enhancement Activities of NEWMAP in Southeast, Nigeria. The specific objectives were to: determine the respondents' perception about NEWMAP livelihood enhancement activities; assess the level of participation of the respondents in different stages of NEWMAP activities; and ascertain the output of beneficiaries before and after participating in the project. This study tested the hypotheses that there is no significant relationship between respondents' perception of NEWMAP livelihood activities and their participation in the project activities; and there is no significant difference between the mean output (crops and livestock) of the respondents before and after participation in the implementation of NEWMAP livelihood enhancement activities.

Methods

The study was conducted in Southeast Nigeria. The region lies in the humid tropical agro-ecological zone of Nigeria. It is located within latitude 5°45` to 6°10`N and longitude 6°50` to 7°15`E, in the southeast Nigeria (Egbueri & Igwe, 2021) and covers a land area of about 28,987 square kilometers, or 3.19 percent of the total of Nigeria. The zone is made up of five States, namely Abia, Anambra, Ebonyi, Enugu and Imo States. The States in the zone share similar characteristics (NPC, 2006). The zone covers the bulk of Igbo-speaking ethnic territory of Igbo land. The area lies mainly on plain under 200m above sea level. It is bounded on the South by Akwa Ibom and River States, on the East by Cross River State, on the West by River Niger and Delta State, and on the North by Benue State.

The population of the study comprised all NEWMAP Livelihood Enhancement Activities beneficiaries in approved NEWMAP communities in Southeast Nigeria. The population is illustrated in Table 1.

Purposive and random sampling techniques were used to choose the study's respondents. Firstly, three States of Anambra, Abia and Enugu were purposively selected. This is because of the high number of NEWMAP communities and preponderance of NEWMAP activities in these States. Secondly, two NEWMAP communities were randomly selected from each state giving a total of six (6) communities. Thirdly, ten (10) Community Interest Groups (CIGs) were randomly selected from each community to make a total of sixty (60) CIGs. Fourthly, six (6) CIGs members were randomly selected from

Table 1: Population of the Study

S/N	STATE	L.G.A	NEWMAP COMMUNITY	NO. OF BENEFICIARIES	NO. OF CIGs
1.	Anambra	Awka South	Neros Plaza/Aquinas	200	18
		Njikoka	Abagana	200	14
		Onitsha North	Omagba	500	23
2.	Abia	Umunneochi	AmudaAchara	334	33
		Umuahia North	Amuzukwu	107	12
		Isialangwa North	Umuezeukwu	351	34
3.	Enugu	Udi	AmekeNgwo/9th Mile	400	10
		Udi	UgwutoNsude	400	10
	Total			**2,492**	**154**

Source: NEWMAP SPMU (2020)

each Community Interest Group giving 120 respondents from each state and a total of 360 respondents sampled in Southeast Nigeria.

Primary data were collected and used for the study. Structured questionnaire/interview schedule were used for data collection. Data collected for the study were analyzed using both descriptive and inferential statistics. Objectives 1, 2 and 3 were realized using descriptive statistics such as means scores generated from four- and five-point likert scales respectively. Hypotheses I was tested using Pearson Product Moment Correlation which was further subjected to test of significance while hypothesis II was tested using Z-test.

Results and Discussions

Perception of the Respondents on the Benefits of NEWMAP Livelihood Enhancement Activities

The result in Table 2 shows that most of the items scored above the decision point of 2.50 and were regarded as positive factors. In Southeast Nigeria, the result of data analysis as presented in Table 2 showed that most of the items were accepted as positive factors because they scored above the decision point of 2.50. They include the following: NEWMAP livelihood activities met the felt needs of the beneficiaries ($\bar{x}$ =3.61), the projects' livelihood activities improved our crop farming technical knowledge ($\bar{x}$=2.95), the projects livelihood activities improve our livestock farming knowledge ($\bar{x}$ = 3.38), the projects' livelihood activities enhanced our knowledge of agro-processing ($\bar{x}$ = 2.81), the projects' livelihood activities enhanced our engagement in non-farming activities ($\bar{x}$=3.13), the project livelihood activities improved our leadership roles ($\bar{x}$=3.42), the projects' livelihood activities improved or business and entrepreneurial skills ($\bar{x}$=3.48), the projects' livelihood activities created employment for our unemployed youths ($\bar{x}$ = 3.46), the projects' livelihood activities created employment and income for our physically challenged persons ($\bar{x}$=3.41), the projects' livelihood activities increased business opportunities in our community ($\bar{x}$ = 3.47), the projects' livelihood activities improved the income generating power of the beneficiaries ($\bar{x}$ =3.47), the project livelihood activities enhanced my income generating power of the beneficiaries ($\bar{x}$ = 3.47), the projects' livelihood activities enhanced my income generating ability from agriculture ($\bar{x}$=3.56), the projects' livelihood activities enhanced social network in my community ($\bar{x}$ = 3.40), the projects' livelihood activities enhanced my propensity to save ($\bar{x}$= 3.34), the project livelihood activities increase craft making in my community ($\bar{x}$=2.87), the projects' livelihood activities increase petty trading in my community ($\bar{x}$ =3.13), the project livelihood activities led to friendship between us and visitors from other culture ($\bar{x}$ =2.58), the projects livelihood activities enhanced our knowledge of the environment and built our capacity on environmental conservation ($\bar{x}$ =2.83) and the project livelihood activities

Table 2: Respondents' Perception on the Benefits of NEWMAP Livelihood Enhancement Activities

S/N	Items	Abia	Anambra	Enugu	South-east
i.	NEWMAP livelihood activities satisfied the needs of the beneficiaries	3.48	3.59	3.75	3.61
ii.	The projects' livelihood activities improved our crop farming technical knowledge	3.03	2.48	3.33	2.95
iii.	The projects' livelihood activities improved our livestock farming knowledge	3.36	3.34	3.43	3.38
iv.	The project livelihood activities enhanced our knowledge of agro-processing	2.58	2.55	3.31	2.81
v.	The projects' livelihood activities enhanced our engagement in non-farming activities	3.02	3.08	3.29	3.13
vi.	The projects' livelihood activities improved our leadership roles	3.41	3.48	3.38	3.42
vii.	The projects' livelihood activities improved our business and entrepreneurial skills	3.52	3.49	3.44	3.48
viii.	The projects' livelihood activities created employment for our unemployed youth	3.43	3.51	3.43	3.46
ix.	The projects' livelihood activities created employment and income for our physically challenged persons	3.22	3.43	3.57	3.41
x.	The projects' livelihood activities increased business opportunities in our community	3.31	3.55	3.56	3.47
xi	The livelihood activities improved the income generating power of the beneficiaries	3.36	3.52	3.53	3.47
xii.	The projects' livelihood activities enhanced my income generating ability from agriculture	3.52	3.59	3.58	3.56
xiii.	The projects' livelihood activities enhanced social network in my community	3.28	3.47	3.46	3.40
xiv.	The projects' livelihood activities enhanced my propensity to save	3.14	3.49	3.38	3.34
xv.	The projects' livelihood activities enhanced cooperative operation in my community	3.42	3.29	3.37	3.36
xvi.	The projects' livelihood activities increased craft making in my community	2.84	2.60	3.18	2.87
xvii	The project livelihood activities increased petty trading in my community	3.28	2.91	3.20	3.13
xviii	The projects' livelihood activities led to marriage between us and visitors from other cultures	2.14	1.75	1.63	1.84
xix	The projects' livelihood activities led to friendship between us and visitors from other culture	2.58	2.59	2.57	2.58
xx	The project livelihood activities enhanced our knowledge of the environment and built our capacity on environmental conservation	2.81	2.72	2.19	2.83
xxi	The projects' livelihoods activities enabled me to adopt environmentally friendly and agricultural practices	3.21	3.20	3.19	3.20
	Grand mean	**2.26**	**3.17**	**3.26**	**3.23**

Source: Field Survey, (2019); ≥ 2.50 = positive perception; < 2.50 = negative perception

enabled me to adopt environmental friendly and improved agricultural practices ($\bar{x}$=3.20). The grand mean of 3.23 was higher than the cut-off point of 2.50. Other benefits enumerated by the respondents were: the project affected our neighboring communities indirectly ($\bar{x}$ = 3.00) among others. This implies that beneficiaries generally in Southeast Nigeria had positive perception about NEWMAP livelihood enhancement activities. This further implies that NEWMAP was fulfilling its mandate of improving the socio-economic conditions of rural dwellers through the implementation of livelihood enhancement activities. This finding is comparable to that of Ominikari (2017), who found that beneficiaries of the Fadama III agricultural project in Bayelsa State had a favorable opinion of it.

Level of Participation of the Respondents on Various Stages of NEWMAP Activities

The result in Table 3 shows that most of the variables scored above the decision point of 2.50, meaning that the respondents participated actively in various activities of NEWMAP project in the area. They include: needs assessment and prioritization of needs ($\bar{x}$=2.90), CIGs projects planning and design ($\bar{x}$=3.38), awareness and sensitization (consultation) meetings ($\bar{x}$ = 3.37), rain water harvesting activities ($\bar{x}$=3.11), missions and follow-up visits ($\bar{x}$ =3.06), environmental and social management plans ($\bar{x}$ = 3.22), baseline survey activities ($\bar{x}$=3.06), catchment management planning ($\bar{x}$ = 3.22), site committee election and inauguration ($\bar{x}$ = 3.11), community association election and inauguration ($\bar{x}$ =3.07), community interest group formation and Exco management of sub-grant ($\bar{x}$ = 3.37), federal projects management unit based activities ($\bar{x}$ =3.39), state projects management unit based activities ($\bar{x}$=3.26) umbrella NGO visit schedules and activities ($\bar{x}$ = 3.24), attendance to CIGs meetings ($\bar{x}$=3.32), decision on location of CIGs projects ($\bar{x}$=3.42), financial (in-land) contributions to CIGs projects ($\bar{x}$=3.39), trainings organized by service providers ($\bar{x}$ =3.38), CIGs projects management ($\bar{x}$ = 3.29), marketing and evaluation of CIGs projects ($\bar{x}$ = 2.92) and other consultancy services ($\bar{x}$ = 3.32). The grand mean score on the level of participation NEWMAP livelihood enhancement activities in Southeast Nigeria was 3.16 which was above the cut-off point of 2.50. This implies that majority of the sampled respondents participated actively in NEWMAP livelihood enhancement activities in the study area.

This result is supported by Nwachukwu *et al.* (2016) who reported that crop farmers in Anambra State participated actively in FADAMA III programme with grand mean result ($\bar{x}$ = 3.91). The result also agrees with the study conducted by Ahmadu *et al.* (2012) where they revealed that beneficiaries participated actively in all programme activities. This finding is in consonance with those of Umeh *et al.* (2014) who investigated socio-economic perspective to rural women participation in National Programme for Food Security in Ebonyi State, Nigeria. But this finding is contrary to those of Oladeji *et al.* (2017) who reported low level ($\bar{x}$ = 1.77) of participation of rural youths in community development programmes in Osun State.

Farm Output of the Beneficiaries before and after Implementation of NEWMAP Livelihood Enhancement Activities

The yields obtained from maize, cassava and yam are: 8.291 and 8.747; 9.042 and 9.917; 6.653 and 8.194 before and after the project respectively are shown in Table 4. This indicates a gradual shift in yield after implementation of NEWMAP livelihood enhancement activities; which could have resulted from the training obtained from service providers and focal NGOs recruited by NEWMAP. The observed yield is far below the estimated yield of 15 MT/Ha for cassava and current world yield of 12.8 MT/Ha (FAO, 2013). For yam, improved agronomic practices yields about 13.1MT/ha; while maize is expected to yield 10.7MT/Ha (FAOSTAT, 2014). The deviation in yield may be as a result of extension service delivery of IFAD employed extension personnel who are always undergoing one training or the other facilitated by IFAD; unlike NEWMAP service providers who may not have been receiving training by NEWMAP. Though, they may be specialists in their area of specialization.

Table 3: Level of Participation of NEWMAP CIGs Beneficiaries in the Projects' Activities in Southeast Nigeria

	Items	Abia	Anambra	Enugu	Southeast
i	Needs assessment and prioritization of needs	3.11 HP	3.37 HP	2.23 HP	2.90 HP
ii	CIGs projects planning and design	3.35 HP	3.40 HP	3.39 HP	3.38 HP
iii	Awareness and sensitization meetings	3.13 HP	3.57 HP	3.40 HP	3.37 HP
iv	Rain water harvesting activities	3.53 HP	3.33 HP	3.48 HP	3.11 HP
v	Mission and follow up visits	2.46 HP	3,34 HP	3.38 HP	3.06 HP
vi	Environmental and social management plans	2.89 HP	3.40 HP	3.38 HP	3.22 HP
vii	Baseline survey activities	2.54 HP	3.35 HP	3.30 HP	3.06 HP
viii	Catchment management planning	2.88 HP	3.44 HP	3.30 HP	3.11 HP
ix	Site committee election and inauguration	2.42 HP	3.38 HP	3.01 HP	3.07 HP
x	Community association election and inauguration	2.27 HP	3.58 HP	3.46 HP	3.43 HP
xi	CIGs formation and exco inauguration	3.13 HP	3.49 HP	3.48 HP	3.37 HP
xii	Training on management of sub-grant	2.95 HP	3.75 HP	3.47 HP	3.39 HP
xiii	Federal projects management unit-based activities	2.98 HP	3.36 HP	3.44 HP	3.26 HP
xiv	Umbrella NGO visits schedules and activities	2.94 HP	3.38 HP	3.40 HP	3.24 HP
xv	Attendance to CIGs meetings	3.30 HP	3.31 HP	3.36 HP	3.32 HP
xvi	Decision on location of CIGs projects	3.46 HP	3.44 HP	3.36 HP	3.42 HP
xvii	Financial (in-kind) contributions to CIGs projects	3.27 HP	3.38 HP	3.53 HP	3.39 HP
xviii	Trainings organized by service providers	3.25 HP	3.46 HP	3.45 HP	3.38 HP
xix	CIGs projects management	3.17 HP	3.33 HP	3.36 HP	3.29 HP
xx	Sales of matured/harvested CIGs products	2.96 HP	3.25 HP	3.18 HP	3.13 HP
xxi	Attendance to workshops outside your community to other NEWMAP communities	1.15 LP	1.29 LP	1.67 LP	1.37 LP
xxii	Monitoring and evaluation of CIGs projects	3.18 HP	3.20 HP	2.38 HP	2.92 HP
xxiii	Other consultancy services	3.26 HP	3.43 HP	3.28 HP	3.32 HP
	Grand mean	**2.94 HP**	**3.32 HP**	**3.21 HP**	**3.16 HP**

Source: Field Survey, 2019.
Keys: HP = high level of participation; LP = low level of participation

Table 4: Farm Output (Crops) of the Beneficiaries Before and After Implementation of NEWMAP Livelihood Enhancement Activities in Southeast Nigeria

			Abia		Anambra		Enugu		Southeast	
	Crop	MT/Ha	Yield/output before joining NEWMAP	Yield/output after joining NEWMAP	Yield/output before joining NEWMAP	Yield/output after joining NEWMAP	Yield/output before joining NEWMAP	Yield/ output after joining NEWMAP	Yield/output before NEWMAP	Yield/output after joining NEWMAP
1	Maize	1.0-5.0	28(23.30)	20(16.7)	36(30.00)	31(25.83)	37(30.83)	28(23.33)	101(28.06)	79(21.94)
		6.0-10.0	47(39.20)	53(44.2)	46(38.33)	47(39.17)	44(36.67)	49(40.83)	137(38.06)	149(41.39)
		11.0-15.0	45(37.50)	47(39.2)	38(31.67)	42(35.00)	39(32.50)	43(35.84)	122(33.88)	132(36.67)
		Above 15.0	-	-	-	-	-	-	-	-
	Mean		**8.708**	**9.158**	**8.083**	**8.458**	**8.083**	**8.625**	**8.291**	**8.747**
2	Cassava	1.0-5.0	32	15	22	20	31	27	85	62
		6.0-10.0	43	41	51	46	45	49	139	136
		11.0-15.0	38	54	39	39	35	31	112	124
		Above 15.0	7	10	8	15	9	13	24	38
	Mean		**8.833**	**10.458**	**9.375**	**10.042**	**8.917**	**9.250**	**9.042**	**9.917**
3	Yam	1.0-5.0	65	25	47	20	51	20	163	65
		6.0-10.0	36	79	48	64	47	73	131	216
		11.0-15.0	19	16	25	36	22	27	66	79
		Above 15.0	-	-	-	-	-	-	-	-
	Mean		**6.083**	**7.625**	**7.083**	**7.475**	**6.792**	**8.292**	**6.653**	**8.194**

Numbers in brackets are percentages)

Source: Field Survey Data, 2019

The result shows that positive and significant relationship exists between the respondents' perception and participation at 5% level of significance. This implies that respondents participated actively in programmes based on their perception of the activities of such programmes. This further implies that respondents would participate in programmes they had positive perception about and consequently not participate in programmes they have negative perception about. This also implies that NEWMAP livelihood enhancement activities need to be effective in the design and implementation of its activities as well as positively influencing the poverty status of beneficiaries as this would arouse the interest of non-beneficiaries. This finding is similar to those of Innih and Dimellu (2013) who reported a significant relationship between attitude and participation of beneficiaries in National Fadama project in Kogi State.

Hypotheses Testing

Furthermore, the test of significance as shown in Table 5 indicates that significant difference exists between perception and participation in NEWMAP livelihood activities in Southeast Nigeria with t-value of 8.1349 which is significant at $p<0.05$ level of significance. This implies that there is a significant relationship between perception and participation of beneficiaries of NEWMAP livelihood enhancement activities. The null hypothesis that states that "there is no significant relationship between respondents' perception of NEWMAP livelihood enhancement activities and their participation" was thus rejected and the alternative accepted.

The result in Table 6 showed that the calculated test result (3.012) was greater than the z-test value tabulated (1.048) at $p\leq0.05$, we reject the null hypothesis and accept the alternative hypothesis. This implies that there

Table 5: Correlation Analysis Showing Relationship between Respondents' Perception of NEWMAP Livelihood Enhancement Activities and their Participation in Southeast Nigeria

		Perception	Participation	T-value
Perception	Pearson Correlation	1	0.377**	
Sig. (2-tailed)			.000	
N		360	360	8.1349*
Participation	Pearson Correlation	0.377**	1	
Sig. (2-tailed)		.000		
N		360	360	

Source: Field survey data, 2019

**correlation significant at 0.01 level (2-tailed), T-tabulated value (2-tails) at 5% = 2.160; at 1% = 3.012, *significant at 5% level, H01 rejected at 0.05 level.

Table 6: Test of significant difference in the mean output (crops) of respondents before and after NEWMAP livelihood intervention

Variables	Mean	Std. Deviation	Std. Error Mean	Df	T- value
Mean output of respondents before NEWMAP livelihood intervention	20,834.42	146212.44	33543.435		
Mean output of respondents after NEWMAP livelihood intervention	37,135.00	78477.59	18003.993	18	
Difference	16,300.58	67811.449	15557.01		1.048

Source: Field survey data, 2019

T-tabulated value (2-tails) at 5% = 2.160; at 1% = 3.012, H01 accepted at 0.05 level

is significant difference in the mean output of the respondents before and after NEWMAP livelihood intervention.

The result indicated that livelihood enhancement activities facilitated by NEWMAP in the study area has contributed to the increase in the productivity of the beneficiaries. This development can be attributed to the higher level of access to advisory services with beneficiaries. The result is in consonance with Nwachukwu *et al.* (2016) who identified fadama project as a recent effort of government towards boosting production and enhancing farmers' welfare. The is also in consonance with the reports of Ezeokeke *et al.* (2012) and Akpan *et al.* (2020) who posited that Fadama project recorded success in achieving greater food production, employment generation and poverty reduction among beneficiaries. This may be indication of support services provided by service providers and focal NGOs involved in the CIGs project implementation and supervision.

Conclusion and Recommendations

The result indicated that livelihood enhancement activities facilitated by NEWMAP in the study area has contributed to the increase in the productivity of the beneficiaries. Based on the findings of this study, the following recommendations were made:

i. Prompt payments of counterpart funds by federal and state governments should be ensured for sustainability of the project and sustenance of the beneficiaries' interest in Southeast Nigeria.
ii. Successful execution of rural programs requires adequate community engagement and direction. Therefore, wider publicity through effective communication outreaches in indigenous language should be ensured.
iii. Similar livelihood enhancement programmes should be established at the grassroots level by the local government authorities to ensure that farmers are practicing farming along with a wide range of income generating activities to improve their well-being.
iv. NEWMAP should make provision for seminars and workshops of the CIGs beneficiaries outside their communities to enable them observe the success stories of other sites and exploit various ways through which the programme activities can be better implemented.

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