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Constraints and Strategies for Improving Agricultural Intervention Programmes in Nigeria: A Case of National Fadama Development Project Phase II in Kogi State, Nigeria

Olaolu M.O.¹ and Akinagbe² O.M.

¹ Department of Agricultural Extension,
Faculty of Agriculture, University Nigeria Nsukka, Enugu state, Nigeria.
+2348065489702

E-mail: michealolaolu@yahoo.com

²Department of Agricultural Extension & Communication Technology,
Federal University of Technology, Akure, Ondo State, Nigeria
Emails: wolexakins@yahoo.com

Abstract

The study was carried out to examine the constraints and strategies for improving agricultural intervention programmes in Nigeria with particular reference to the National Fadama Development Project, phase two in Kogi state. A set of interview schedule and questionnaire were used for data collection. Descriptive statistics like frequency, percentage and mean score were used to present the data. Factor analysis with principal component model on varimax rotation was used to determine major constraints while t-test was used to analyse the differences in perception of two sets of respondents to the constraints of the programme. Poverty was the major constraint perceived by farmers (mean = 3.89), while facilitators perceived both high cost of farm inputs and lack of credit facilities as the most serious constraint (mean = 3.38 each). Both farmers and facilitators shared similar opinion on twenty identified constraints and have significant differences in their perception of seven identified problems ($p \leq 0.05$). The result however, showed that several factors constrained the effectiveness of the project. The factors were grouped using factor analysis into technical problems, institutional problems and economic problems. For the farmers, the major strategy suggested was supply of farm machineries (65.2%), while facilitators suggested supply of subsidies and training opportunities for farmers (87.5%). It was recommended that, employment of project staff should be specific to only those with good agricultural background especially in crop science and agricultural extension to allow for effective relationship between the project and farmers.

Key words: Fadama, intervention programmes, constraints, Kogi state, strategies.

Introduction

Previous and present governments in Nigeria have tried to sustain investment and support for agriculture by embarking on different agricultural and rural development programmes such as the National Accelerated Food Production Programme (NAFPP-1973), River Basin Development Authority (RBDA-1975), Operation Feed the Nation (OFN) in 1976, Agricultural Credit Guarantee Scheme (ACGS-1977), Green

Revolution (GR-1980), Integrated Rural Development (IRD-1980), National Directorate for Employment (NDE-1980), Agricultural Development Programmes (ADP-1985), Directorate of Food, Roads and Rural Infrastructure (DFRRI-1987), the National Land Development Authority (NLDA-1992), The First National Fadama Development Project (FNFDPP-1992), and the National Special Programme for Food Security (NSPFS-2003) (Ajayi 2001; Daudu 2008). These programmes were fashioned to revolutionize agricultural sector of Nigerian economy which was derailing from its normal contribution to the economy (Oriola, 2009).

The first National Fadama Development Programme (NFDP) was to assist the qualifying states of the federation through the World Bank supported Agricultural Development Programmes (ADPs) network to, among others, finance the provision of shallow tubewells in Fadama lands for small scale irrigation, simplifying drilling technologies for shallow tubewells/ wash bores; constructing fadama infrastructures; organizing Fadama farmers for irrigation management, cost recovery and better access to credit marketing and other services; and providing vehicle, pumps and other equipment. It is believed that the provision of this facility should not only boost agricultural production but enhance the income of the farmers and thereby lift them out of the vicious circle of poverty. The facility was enabled in the 1995/96 cropping year (Adeolu & Taiwo 2004).

The National Fadama Development Programme Phase II (NFDP (II)) was implemented in 18 States of the Federation and FCT. While 12 of these states were under the World Bank financing, Kogi State and 5 other states namely; Kwara, Plateau, Jigawa, Borno and Katsina – were co-funded by the African Development Bank (ADB). The project has built on the experiences of the National Fadama Development Project phase (I), which was implemented from 1993 to 1999 with World Bank assistance. The project development objective was sustainably increase the incomes of fadama users — those who depended directly or indirectly on fadama resources (farmers, pastoralists, fishers, hunters, gatherers, and service providers) — through empowering communities to take charge of their own development agenda, and by reducing conflict between fadama users.

The project had three components which included capacity building (CB) and advisory services (AS), rural infrastructure investment (RII) and project management and coordination (PMC). Specifically the project aimed at enhancing agricultural production, productivity and value addition for smallholders and rural entrepreneurs in the fadama areas on a sustainable basis using community driven development (CDD) approach. This approach empowers beneficiary communities to take charge of their own development agenda by drawing up the community development plans (CDPs) through participatory and socially inclusive processes, with the assistance of project facilitators (PFs) (Kogi state Agricultural development programme – state fadama desk office (KOGI ADP-SFDO), 2007). The Federal Ministry of Agriculture and Rural Development (FMARD), as executing agency, had the overall responsibility for implementation of the Project.

However, since most of the project's administrative, financial and implementation arrangements were decentralized and demand-driven, critical decisions were placed at the community level — within the fadama community associations (FCAs) and the local organizations or fadama resource user groups (FRUGs) which supported them.

Facilitators supported under the project helped to organize the fadama community associations (FCAs) and guided them through an intensive process of group decision-making using a range of participatory techniques, resulting in local development plans (LDPs). Therefore, since several programmes implemented in Nigeria before the NFDP (II) did not employ the decentralised approach of project choice and implementation, it is important to explore the problems possibly encountered by this new approach as well as possible strategies to be used along with the news approach.

Purpose of the Study

1. identify problems encountered by both facilitators and beneficiaries in project implementation; and
2. determine possible strategies for improving on the performance of the project

Methodology

The study was carried out in Kogi state. A multistage sampling technique was used. In stage one, 4 LGAs were purposively selected out of the 10 LGAs that participated, this was based on their involvement in rice production. The LGAs were Idah, Ibaji, Lokoja and Kogi. The second stage involved collection of list of communities that were involved in fadama rice production from each of the LGAs. From that list two communities were selected through simple random sampling technique. A total of eight communities were involved in the study. The third stage involved collection of a list of participant fadama rice farmers in each of the eight communities. From the list, a total of fourteen rice farmers were selected through simple random sampling technique. A total of 112 farmers were interviewed for the study. Data were collected using interview schedule.

To ascertain the constraints militating against effective participation in the NFDP(II), a list of possible constraints were made available. Respondents were then asked to indicate the level of their perceived seriousness of each constraint such as poor soil fertility, high cost of farm inputs, high cost of labour etc on a 4 point Likert-type scale. While for strategies, respondents were asked to suggest likely strategies that can be used to improve the project performance. Descriptive statistics like frequency, percentage and mean score were used to present the data. Factor analysis with principal component model on varimax rotation was used to determine major constraints while t-test was used to analyse the differences in perception of two sets of respondents to the constraints of the programme.

Results and Discussion

Major problems encountered by farmers and facilitators

Table 1 reveals that out of the twenty seven identified problems, nine problems were reported serious problems by both farmers and facilitators. The serious problems that included: high cost of farm inputs, poor soil fertility, high cost of labour, unavailability of agro-chemicals, high cost of agro-chemicals, poor fadama access roads, inadequate technical knowledge of improved technology, lack of credit facilities, low productivity, slow implementation of project plans, poverty level of the farmers. Others included: high cost of farm inputs, high cost of labour, unavailability of agro chemicals, high cost of agro chemicals, poor fadama access roads, lack of credit facilities and low productivity. Slow

implementation of project plans and poverty level of the farmers were perceived to be serious problems, by farmers. Facilitators perceived poor soil fertility and inadequate technical knowledge of improved technology as serious problems.

Poverty level of farmers had the highest (3.9) mean among farmers which is in agreement with ADF findings that in the year 2000, more than 70.0% of Nigerians were estimated to be living below the internationally defined poverty line. In the same year, both per capita income and per capita private consumption were lower than in the early 1970s. Per capita income fell from \$1,600 in 1980 to \$270 in 2000 (ADF, 2003). About two-thirds of the Nigerian people are poor, despite living in a country with vast potential wealth (National Planning Commission, 2004). While lack of credit followed with a mean score of 3.9. the problem is fully linked to the poverty state of the farmers. The problem of high cost of labour (means= 3.8) as one of serious problems encountered could be as a results of the high cost of weeding, rice farm land preparation, and harvesting. According to Oniah, Kuye and Idiong (2008) labour was found to be the most important determinant of output in rice. The cost of labour, is a major source of worry to farmers as observed by Longtau (2003).

On the other hand, the most serious problems as perceived by the facilitators including high cost of farm inputs and lack of credit facilities are in every way linked to the poverty state of the farmers. The next to these is problem of low productivity of farmers with mean score of 3.3. This implies that poverty is a major challenge facing farmers since both farmers and facilitators perceive the severity of the problems in the line of poverty/ income. And if these programmes are able to resolve the issues of poverty it will go along way in solving the problems faced by farmers/ beneficiaries.

Seven (7) problems were significantly perceived differently by farmers and facilitators. The remaining 20 problems were perceived in the same way by both farmers and facilitator. Most of the identified problems were perceived the same way. The few problems perceived differently were lack of sufficient land, high cost of labour, marketing problems, difficulty in integrating technology to existing production systems, lack of credit facilities, low productivity and slow implementation of the project plans.

The similarity of the perception of both the farmers and facilitator on majority of the identified problems show that their perceptions of these problems were true. This implies that, the perception of both farmers and facilitators can be used to formulate policies that will go along way in the improvement of intervention programmes of this kind in the future. The few other problems perceived differently could be as a result poor rapport existing between farmers and facilitators. This is likely as a result of the facilitators' areas of specialisation (not extension professionals) and because most the facilitators are more office oriented than field oriented. Most of the problems perceived differently were mostly field oriented problems. The t-values that were negative shows that the mean score for the perception of farmers was less than those of facilitators.

Table 1: Mean distribution identified problems encountered by both facilitators and fadama rice farmers

Problems	Farmers		Facilitators		t-Value
	Mean	SD	Mean	SD	
High cost of farm inputs	2.93*	0.96	3.38*	0.52	2.23
Lack of sufficient land	1.38	0.60	2.25	1.28	2.88**
Poor soil fertility	2.15	1.27	2.88*	0.83	2.27
Lack of improved seed for planting	2.42	0.80	2.00	0.76	-1.51
Difficulty in getting water	2.26	0.91	2.38	1.60	0.172
High cost of Labour	3.81*	0.51	3.13*	0.83	-2.30**
High incidence of pest and diseases infestation	2.37	0.83	2.25	0.71	-0.41
Unavailability of agro-chemicals	2.84*	0.84	2.50*	1.07	-0.86
High cost of agro chemicals	2.96*	1.10	2.88*	0.83	-0.37
Poor storage facilities	2.04	1.31	1.88	1.24	-0.31
Poor fadama access roads	3.06*	1.16	3.38*	0.92	0.91
Inadequate technical knowledge of improved technology	2.14	0.79	2.50*	1.19	0.81
Poor marketing facilities	1.97	0.59	2.25	1.16	0.69
Incompatibility of innovations	1.36	0.58	1.13	0.35	-1.70
Poor extension agent-farmer contact	1.60	0.59	1.75	1.04	0.41
Irregular visit from fadama state office	1.56	0.60	1.88	1.13	0.78
Lack of fadama training	1.65	0.58	1.88	0.83	0.74
Low price of farm produce	1.78	0.61	1.88	1.12	0.24
Marketing problems	1.59	0.56	2.13	0.83	1.79**
Difficulty in integrating technology to existing production system	1.48	0.61	2.25	0.89	2.38**
Incompetency of extension staff	1.70	0.68	1.88	1.36	0.39
Lack of credit facilities	3.87*	0.59	3.37*	0.92	-1.49**
Low productivity	2.65*	0.55	3.25*	1.39	1.21**
Slow implementation of project plans	3.47*	0.61	2.38	1.30	-2.35**
Poverty level of the farmers	3.89*	0.56	1.75	1.16	-5.16
Poor leadership of FCAs	1.40	0.53	1.62	1.06	0.57
The process of CDD	1.63	0.87	1.50	0.76	-0.38

* Serious problem ** Significant $P \leq 0.05$

Farmers' perception on the problems being encountered

From data in Table 2, three problem factors were extracted based on the response of the rice farmers who benefited in the NFDP (II). Factors, 1, 2, and 3 were named technical problems, institutional problems and economic problems, respectively.

Factor 1 "technical problems" was dominated by lack of improved seed for planting (-0.754), difficulty in getting water (0.626), high cost of labour (-0.704), unavailability of agrochemicals (0.810), poor fadama access roads (-0.701), inadequate technical knowledge of improved technology (-0.756) and low productivity (-0.613).

While in factor 2 "institutional problems, the dominant variables are: high cost of agrochemicals (-0.731), poor storage facilities (0.864), low prices of farm inputs (0.495), slow implementation of project plans (0.693) and the process of CDD (0.869). The factors loading under economic factor included: lack of sufficient land (0.519), incompatibility of innovation (0.782), difficulty in integrating technology to existing production system, lack of credit facilities and high cost of farm inputs (0.605).

This result implies that problems confronting NFDP (II) based on farmers' perception related to technicality, institutional and economical problems. This means that NFDP (II) that problems confronting NFDP (II) borders on the issues that surrounds the technicality of the operation of the program as well as the mode of operation of the program. Also the economic statuses of farmers also constituted the areas where the problems facing NFDP (II) cluster around. This, therefore will require that for policy development on subsequent intervention programmes, planning of such programmes should bear in mind the technical, institutional and beneficiaries' economic factors.

Table 2: Rotated component matrix of farmers' perception of problems to effective performance of the programme.

Problems	Factor 1 (Technical problems)	Factor 2 (Institutional problems)	Factor 3 (Economic problems)
Lack of sufficient land	-0.211	0.133	0.519
Poor soil fertility	0.138	-0.008	0.168
Lack of improved seed for planting	-0.754	0.012	0.200
Difficulty in getting water	0.626	0.014	0.013
High cost of Labour	-0.704	0.004	0.097
High incidence of pest and diseases infestation	0.185	-0.367	-0.152
Unavailability of agro-chemicals	0.810	-0.038	0.134
High cost of agro chemicals	0.354	-0.731	0.081
Poor storage facilities	-0.225	0.864	-0.135
Poor fadama access roads	-0.701	0.041	0.041
Inadequate technical knowledge of improved technology	-0.756	-0.005	0.268
Poor marketing facilities	0.037	0.344	0.331
Incompatibility of innovations	-0.026	-0.142	0.782
Poor extension agent-farmer contact	0.484	-0.359	0.587
Irregular visit from fadama state office	0.521	-0.296	0.527
Lack of fadama training	0.491	-0.159	0.694
Low price of farm produce	0.290	0.495	0.364
Marketing problems	-0.172	0.524	0.489
Difficulty in integrating technology to existing production system	-0.255	0.373	0.675
Incompetency of extension staff	0.461	0.511	0.259
Lack of credit facilities	0.117	0.038	-0.489
Low productivity	-0.613	0.265	0.172
Slow implementation of project plans	0.378	0.693	0.000
Poverty level of the farmers	0.074	-0.049	-0.279
Poor leadership of FCAs	-0.236	-0.358	0.154
The process of CDD	-0.199	0.869	0.045
High cost of farm inputs	-0.086	0.311	0.605

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Facilitators' perception of the problems being encountered

From data in Table 3 also, three problem factors were extracted based on the response of the NFDP (II) project facilitators. Factors, 1, 2, and 3 were named economic problems, institutional problems and technical problems respectively.

Data in Table 8 reveal that items with high loadings under economic problem factor are poor soil fertility (0.726), lack of improved seed for planting (0.744), high cost of labour (0.950), poor storage facilities (0.667), incompatibility of innovation (0.455) and incompetence of extension staff (-0.773).

Items which loaded very high under institutional problems included : lack of sufficient land (0.942), irregular visit from the fadama state office (0.837), lack of credit facilities (0.562), slow implementation of project plans (0.919) and poor leadership of FCAs (0.603).

Technical problems had six items loading higher these include high cost of farm inputs (0.786), inadequate knowledge of improved technology (0.957), lack of fadama training (-0.578), low price of farm produce (-0.688), difficulty in integrating technology to existing production system (0.638) and poverty level of the farmers (-0.763).

This result implies that problems confronting NFDP (II) based on facilitators' perception related also are based on technicality, institutional and economical problems. This means that NFDP (II) that problems confronting NFDP (II) borders really on the issues that surrounds the technicality of the operation of the program as well as the mode of operation of the program. Also the economic statuses of farmers also constituted the areas where the problems facing NFDP (II) cluster around. This is because there is an agreement between the groupings of the variables clusters on similar factors as those of farmers. This therefore makes it very important that policy developers on subsequent intervention programmes, planning of such programmes should bear in mind the technical, institutional and beneficiaries' economic factors.

Table 3: Rotated component matrix of facilitators' perception of problems to effective performance of the programme.

Problems	Factor 1 (Economic problem)	Factor 2 (Institutional problem)	Factor 3 (Technical problem)
High cost of farm inputs	0.396	0.125	0.786
Lack of sufficient land	0.111	0.942	0.042
Poor soil fertility	0.726	0.248	-0.330
Lack of improved seed for planting	0.744	-0.159	0.317
Difficulty in getting water	0.764	0.430	-0.286
High cost of Labour	0.950	0.120	0.118
High incidence of pest and diseases infestation	-0.613	-0.490	0.292
Unavailability of agro-chemicals	0.726	-0.310	0.531
High cost of agro chemicals	0.670	-0.012	0.405
Poor storage facilities	0.667	0.321	0.073
Poor fadama access roads	-0.558	0.541	0.293
Inadequate technical knowledge of improved technology	0.039	-0.065	0.957
Poor marketing facilities	0.425	0.614	-0.050
Incompatibility of innovations	0.455	0.014	0.183
Poor extension agent-farmer contact	0.086	0.423	0.404
Irregular visit from fadama state office	0.016	0.837	0.181
Lack of fadama training	-0.209	0.248	-0.578
Low price of farm produce	0.110	0.150	-0.688
Marketing problems	-0.143	-0.350	-0.027
Difficulty in integrating technology to existing production syst	0.087	0.376	0.638
Incompetency of extension staff	-0.773	-0.008	-0.218
Lack of credit facilities	0.299	0.562	0.352
Low productivity	0.488	0.427	0.110
Slow implementation of project plans	-0.324	0.919	-0.101
Poverty level of the farmers	-0.081	-0.370	-0.763
Poor leadership of FCAs	0.047	0.603	-0.292
The process of CDD	-0.595	-0.254	-0.591

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Possible strategies suggested for improving on the performance of the project

Results of the various suggestions on the possible strategies of improving the programme as given by the farmers and the project facilitators were presented in figures 1 and 2.

Farmers suggested strategies

Result from the data in figure 1 shows that the farmers suggested about nine possible strategies for the improvement of the project. Majority of them (65.2%) suggested that tractors should be provide by the programme to easy their farm land preparation. About 58.0% of the farmers were of the opinion that as a way of improving the programme, cash loans should be included in the programme. Increased and timely supply of subsidised farm inputs was another popular suggestion by the farmers with 53.6% of the farmers sharing this opinion. Other suggestions were better fadama access roads, faster and correct implementation of LDPs, more training for farmers, better funding, faithfulness on the fadama programme in fulfilling promises made and provision of water supplying facilities, these suggestions had 51.8%, 53.6%, 33.9%, 17.9%, 37.5% and 7.1% respectively of the farmers.

The result show that provision of tractors, including cash loans in the project, increased and timely supply of farm inputs, better fadama roads construction and faster and correct implementation of the LDPs were seen as the major (with more than 50% of the farmers alluding to them) strategies for improving the programme. All these suggestions point in the direction of funding, this implies that funds allotted for programme like this should be properly used and more funding is needed for agriculture to develop as expected. This in turn results in the development of the rural areas in Nigerians who are predominantly farmers.

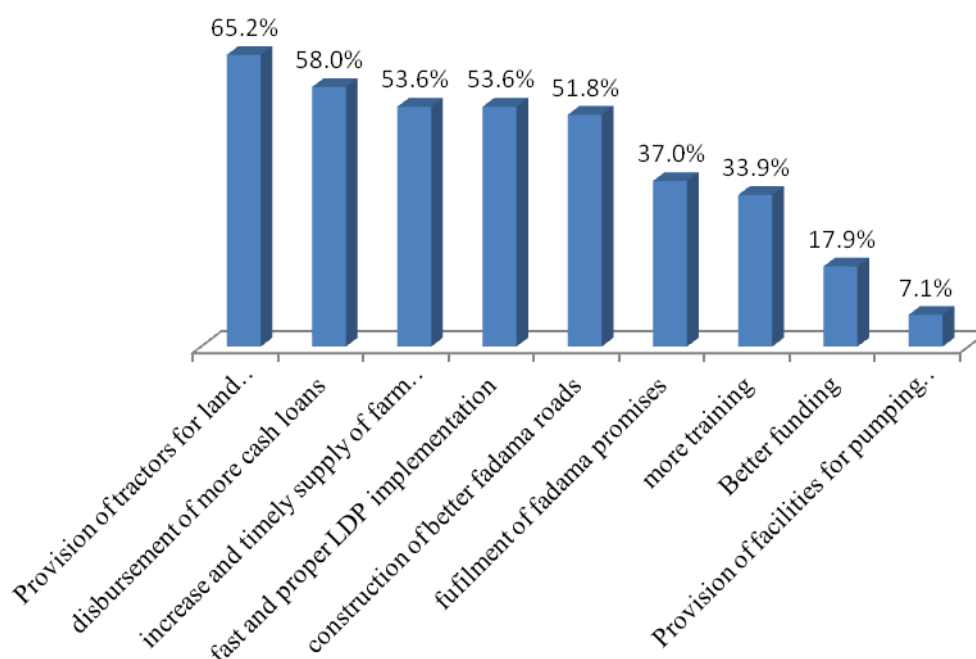


Fig 1: Farmers' suggestion of possible strategies for the improvement of the programme

Facilitators suggested strategies

Figure 2 shows data on eight possible strategies for the improvement of the programme as given by the project facilitator. From the suggestions made, proper implementation and completion of projects that were already stated by the programme was suggested most with 87.5% of the facilitators making that suggestion. Also, 87.5% of them were of the

opinion that supply of subsidised farm inputs and farmers' training is another possible strategy for the improvement of the programme. Prompt release of counterpart fund by LGAs, improvement of project staff training and remuneration as well as adherence to the CDD approach, all had 50% of the facilitators suggested them as possible strategy for the improvement of the programme. About 25% of them also suggested better government policies that consider the programme as one of the poverty reducing programmes should be put in place, 25% of the facilitators also suggested employment of more project staff as a possible strategy for the improvement of the programme. 12.5% of the facilitators suggested that the programmes should be flexible to allow some locations with peculiar conditions to be carried along.

From all the eight suggestions made, five of them being: proper implementation and completion of projects that were already stated by the programme, supply of subsidised farm inputs and farmers' training, Prompt release of counterpart fund by LGAs, improvement of project staff training and remuneration as well as adherence to the CDD approach were popular with up to 50% of the facilitators suggesting them as possible strategies for the improvement of the programme. All these suggestions agrees with those of the farmers which implied increased funding in the agricultural sector of the economy to achieve the MDGs.

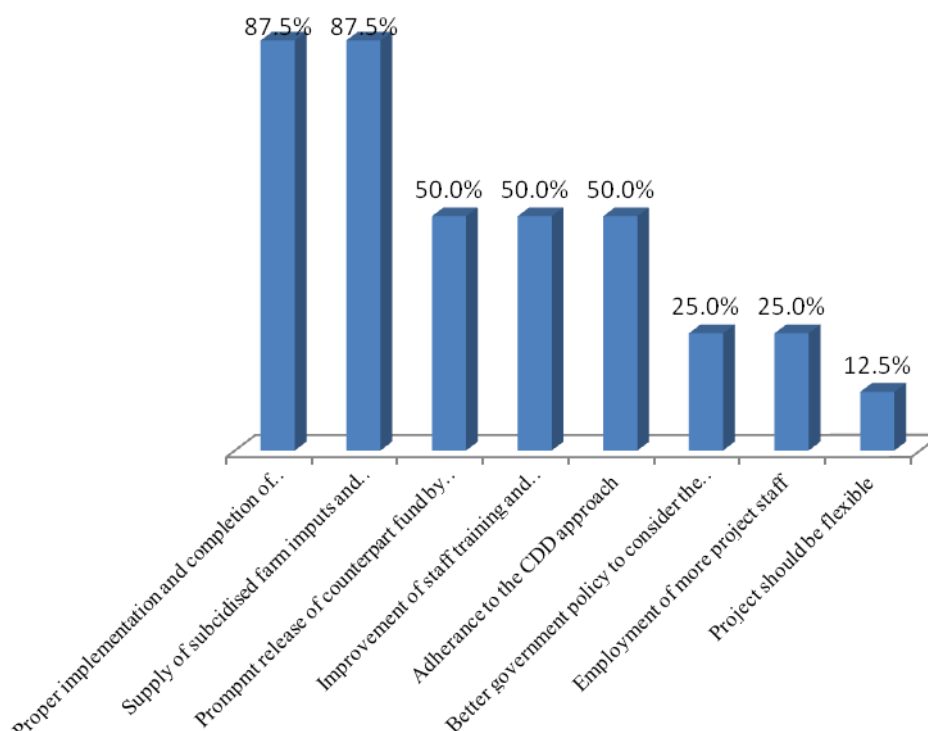


Fig 2: Facilitators' suggestion of possible strategies for the improvement of the programme

Conclusion

In conclusion, there is a common perception by both farmers and facilitators on most of the identified problems shows that these problems are true with the programme implementation. Economic constraints, institutional constraints and technical constraints

still pose some problems in the area, thereby slowing down the full implementation of the programme targets.

Recommendations

Based on the findings of this study, it is recommended that,

1. To improve the overall performance of the intervention programmes, employment of project staff should be specific to only those with good agricultural background especially in crop science and agricultural extension to allow effective relationship between the project and farmers and all participating LGAs should ensure prompt and complete payment of the counterpart funds.

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