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Constraints Faced By Beneficiary Under KCNM Programe in Karnataka

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ABSTRACT

Green revolution transformed Indian agriculture by converting our nation from ship to mouth situation to self-sufficient country. With the record foodgrain production of 264.28 mt, paradoxically the malnutrition scenario in India is alarming. Almost one in six people are still not getting enough to eat on a daily basis. India's achievement in social sectors on alleviation of poverty, hunger and malnutrition, healthcare has been far from satisfactory. India is at the crossroads, the problem is not the availability of food, but access to right kind of food. Nutrition-sensitive agriculture needs to be emphasized. Karnataka Comprehensive Nutrition Mission is the program launched by Government of Karnataka in 2010 in selected high malnutrition burden districts of Karnataka. This is the first program based on a multi-sectoral approach with emphasis on agri-nutri linkages. Hence, it is essential to study the constraints of such programs for addressing malnutrition in a convergent, synergistic mode. Considering this the present study was undertaken with the objective of assessing the constraints of Karnataka Comprehensive Nutrition Mission Program as perceived by the beneficiaries and program officials. Shikaripura and Gubbi blocks from Shivamogga and Tumakuru districts respectively were selected purposively as the study locale, since the program was first initiated here. Eighty women beneficiaries who were involved in agriculture and forty program officials were finally selected as beneficiaries making the total sample size of 120. The ex-post facto research design was used. Appropriate descriptive and inferential statistical tools were used to analyze the data. Unavailability of bio-fortified seeds was the most severe constraint, along with rigid norms of the social system regarding food habits and a general negative attitude towards the Government programs. The credibility of the messages and convergence between various nutrition related programs were the most effective facilitating factors.

Keywords: Agri-nutri linkage, bio-fortified crops, constraints

INTRODUCTION

India is at the crossroads, the problem is not the availability of food, but access to the right kind of food (Swaminathan, 2015). Nutrition-sensitive agriculture is a new concept, to address food and nutritional security. This is the need of the hour, as more than half of the global population is not adequately nourished and is suffering from hunger, micronutrient deficiencies, overweight and obesity. The nature and causes of malnutrition are multidimensional and complex. Additional challenges such as changing demand for agricultural products as well as climate change and natural resource degradation complicate the situation even more.

Malnutrition is caused by various factors related to health, water and sanitation, food security, low incomes, poor agricultural productivity, cropping patterns, migration, education, social factors such as early marriage, early and frequent pregnancies, superstitions and ignorance, lack of access to day care facilities, poor dietary practices, micro-nutrient deficiencies, and finally improper use of resources by various departments. Convergence of efforts of different departments and schemes requires considerable investment of time and effort by a full-time independent agency. Allen (2001) has viewed that improving nutrition in developing countries is both humanitarian and an economic imperative. Yet, the lack of a systematic evaluation of what works and what does not hampers the progress that has been made. Patel et al., (2004) observed that behaviour has an important role in health disparities, for example, young men take greater risks, causing injury and violent death, and men smoke more. The Karnataka Comprehensive Nutrition Mission (KCNM) is aimed to eradicate the problem of malnutrition in the State in the shortest possible time by

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introducing innovative strategy changes. It is a dedicated, stand alone programme to address the problems of malnutrition in the State in a targeted and comprehensive manner. While it specifically targets children between 0-6 years, special emphasis is laid on 0-2 years children keeping in view the special significance of this period in their process of development. Adolescent girls between the ages 10-18 as well as pregnant and lactating mothers are also targeted. This pilot project was undertaken in three blocks namely 'Bellary Rural', in Bellary District, 'Gubbi' Taluk in Tumkur District and 'Shikaripura' in Shivamogga District. The pilot project implementation was commenced in 2011-2012.

Barrett (2002) reported that widespread hunger and malnutrition persist today despite considerable growth in per capita food availability. This has prompted an evolving conceptualization of nutritional security and of mechanisms to attain and maintain nutritional security. Ndiaye (2007) said that the disparate results of these nutrition programs suggest that generating technically sound knowledge about nutrition and providing it to policymakers is not enough to ensure good results. It is also crucial to understand the political context, and the constraints and motivations of politicians, public officials, and other relevant players to initiate, implement, and sustain sound policies. Tontisirin et al., (1999) said that malnutrition that occurs during childhood, adolescence, and pregnancy has an additive negative impact on the birth weight of the newborn.

The Karnataka state was purposively selected for the present study as Comprehensive Nutrition Mission Program has been implemented only in this state. The malnutrition scenario in Karnataka is also a cause of concern. The Infant Mortality Rate (IMR) in Karnataka according to National Family Health Survey III is 43. The under-five age mortality rates in the state of Karnataka (54.7) are also much higher. The percentage of under-three age stunted children in the State (42.4) as per the NFHS III is higher than the national percentage (38.4). Similarly 70.4 per cent of the children under-six years are anaemic in the state. According to Sample Registration System (SRS, 2003-06), Maternal Mortality Rate (MMR) of the State is 213.

METHODOLOGY

The Karnataka, Shikaripura block of Shivamogga district and Gubbi block of Tumakur district were purposively selected since the Karnataka Comprehensive Nutrition Mission Program is being implemented only in these blocks since its inception. From each block 40 women beneficiaries and 20 program officials were selected by using random sampling technique. To get reliable answers, women beneficiaries of the reproductive age group of 18-39 years and those involved in agriculture were selected. Among the selected group, simple random sampling technique was made use of to select the 40 beneficiaries. A list of program officials was obtained from the KCNM head office located at Bangalore. From this list, 20 Program officials were selected by simple random technique. Thus, 80 program beneficiaries and 40 program officials totaling one hundred and twenty beneficiaries formed the sample of the study.

Constraint is any factor that prevents or limits an individual or group from adopting an intervention or restrains them from tapping the intended virtues of an intervention. Constraints can be personal or external to an individual or a social system. An attempt was made to analyse the operational, social, psychological and technical constraints that hinder both the rate and success of effective implementation of the program. Constraints perceived by the beneficiaries in the effective implementation of the program were identified by administering a semi-structured interview schedule. Constraints were ranked based on mean rank obtained for each constraints using Friedman test.

Friedman test was used to determine severity of the constraints by using mean rank. In this study, the test statistics used in case of Friedman test is chi-square test.

Taking into consideration the scope and objectives of the study a well-structured interview schedule was prepared. Before finalizing the interview schedule, it was pre-tested in a non-sampling area to probe into relevancy of the schedule to suit the areas under study. Based on the results of pre-test, suitable modifications were made and a final interview schedule was prepared. Data were collected by personal interview of the beneficiaries and focused group discussions. Collected data were coded and tabulated for statistical analysis.

Both primary and secondary data were utilized for the study. The primary data were collected through survey method using interview schedules (structured and semi-structured) focused group discussion and observation as major tools. The secondary data were collected through strategy and progress report of the KCNM program, official website of KCNM program.

RESULTS AND DISCUSSION

The KCNM program was the first multi-sectoral program. Hence it was important to study the hindering factors in its implementation. The information is based on

perceptions of program beneficiaries and program officials.

Constraints for effective implementation of the Karnataka Comprehensive Nutrition Mission Program as perceived by program beneficiaries

Constraints were categorised into operational, social and psychological. Various constraints in different categories of constraints based on the response of program beneficiaries were compared using Friedman test.

Operational constraints

Operational constraints were those factors which hindered effective implementation of the program due to complexity and requirement of knowledge and skill on nutrition advises given under the program. Five different constraints *viz* unavailability of bio-fortified crop varieties, lack of adequate knowledge about Nutri-Farming System, inaccessibility of program officials, inadequate advisory information and untimely arrival of Energy-Dense Food were enlisted and program beneficiaries' responses on their severity were collected. Results are presented in Table 1.

Table 1: Operational constraints as perceived by program beneficiaries

Operational constraints	Mean Rank*	Rank
Un-availability bio-fortified crop varieties	4.38	I
Lack of adequate knowledge about Nutri-farming system	4.29	II
Program managers/supervisors are not accessible	3.02	III
Advisory information service is inadequate and irrelevant	1.68	IV
Energy-dense food is not timely available	1.64	V

*Mean rank based on Friedman test

Among the enlisted constraints relating to operational aspects in Table 1, unavailability of bio-fortified crop varieties was the most severe constraint as perceived by the program beneficiaries so it was ranked first with mean rank (4.38). It indicates the enhanced need of research and extension on bio-fortified crops so as to operationalize the concept of Farming System for nutrition which can act as remedy for the malnutrition malady. Energy Dense Foods were timely distributed by nutrition volunteers at the doorstep of the beneficiaries, hence delay in reach of EDF was the least severe one with the lowest mean rank value of (1.64).

Table 2: Friedman test for operational constraints

Category	Value
Test statistic	267.279
df	4
P value	0.001

The details of Friedman test for operational constraints are given in Table 2. The test statistic value obtained was 267.279 and its level of significance was 0.001 which indicated that differences are highly significant.

Social constraints

Rigid norms of the social system regarding food habits was considered as the major constraint (mean rank=4.7) because it is the hidden threat to diversify the dietary basket (Table 3). Major local NGOs and SHGs were involved along with advisory in Gramsabha, hence social networking was given the least rank (mean rank=1.7).

Table 3: Social constraints as perceived by the program beneficiaries

n=80

Constraints	Mean Rank *	Rank
Rigid norms of the social system regarding food habits	4.7	I
Less accessibility to other Government programs	3.9	II
Low literacy of beneficiaries	2.9	III
Peer groups are not supportive in nature	1.8	IV
Less networking done under the program	1.7	V

*Mean rank based on Friedman test

The details of Friedman test for social constraints are given in Table 4. The test statistic value obtained was 256.808 and its level of significance was 0.001 which indicated that differences are highly significant.

Table 4: Friedman test for social constraints

Category	Value
Test statistic	256.808
df	4
P value	0.001

Psychological constraints

Various psychological constraints faced by the beneficiaries were enlisted and ranked according to Friedman test.

Table 5: Psychological constraints as perceived by the program beneficiaries

n=80

Psychological constraints	Mean Rank*	Rank
Negative attitude towards government programs	4.5	I
Lack of willingness to go for balanced diets	3.43	II
Lack of good perception towards nutrition program	3.29	III
Apathy in life	2.51	IV
Mental barrier that malnutrition is inevitable in poverty	1.28	V

*Mean rank based on Friedman test

Among the psychological constraints enlisted in Table 5 the negative attitude towards the government programs was perceived as most severe (mean rank=4.5),

because the beneficiaries were not getting their due share of benefits from other Government programs. Lack of willingness to go for balanced diets in spite of knowing its importance was the second most severe constraint (mean rank=3.43). This can be attributed to their poor socio-economic and distress situations. Mental barrier that malnutrition is inevitable in poverty was least severe (mean rank=1.28) since it was wiped out by program interventions.

Table 6: Friedman test for psychological constraints

Category	Value
Test statistic	228.705
df	4
P value	0.001

The details of Friedman test for psychological constraints are given in Table 6. The test statistic value obtained was 228.705 and its level of significance was 0.001 which indicated that differences are highly significant

Overall constraints faced by beneficiaries

Findings from Table 7 reveal that among all categories of constraints the psychological constraints (mean rank=3.37) were found to be the most severe. It indicates the need to address these hidden constraints. It is necessary to change the attitude of people towards Government programs by implementing them effectively and efficiently. Operational constraints were the second most severe ones (mean rank=2.99) which indicates the need to overcome the operational bottlenecks in the program.

Table 7: Overall constraints as perceived by the program beneficiaries

n=80

Constraints	Mean Rank *	Rank
Psychological Constraints	3.37	I
Operational constraints	2.99	II
Social Constraints	2.64	III

*Mean rank based on Friedman test

The details of Friedman test for overall constraints are given in Table .8. The test statistic value obtained was 178.822 and its level of significance was 0.001 which indicated that differences are highly significant.

Table 8: Friedman test for overall constraints

Category	Value
Chi-Square	172.822
df	3
P value	0.001

Constraints for effective implementation of the Karnataka Comprehensive Nutrition Mission Program as perceived by program officials

Operational constraints

Operational constraints for officials were those factors which impeded the effective implementation of the program. Five different constraints on operational constraints were enlisted and Program officials' responses on their severity were collected. Among different operational constraints as enlisted in Table 9 red-tapism, which involves much paperwork, was the most severe (mean rank=3.38), since it is a common feature of Indian bureaucracy. Lack of political will to upscale and out scale the program was found to be the second most severe constraint. It is because of the dynamics of local politics.

Table 9: Operational constraints as perceived by program officials

n=40

Operational Constraints	Mean Rank *	Rank
Red-tapism-more paperwork	3.38	I
Lack of political will to upscale and out scale the program	2.92	II
Difficulty in identifying Beneficiaries	1.80	III
Lack of adequate infrastructure and funding	1.56	IV
Difficulty in maintaining coordination between various agencies/programs	1.52	V

*Mean rank based on Friedman test

The details of Friedman test for social constraints are given in Table 10. The test statistic value obtained was 245.279 and its level of significance was 0.001 which indicated that differences are highly significant.

Table10. Friedman test for operational constraints

Category	Value
Test statistic	245.279
df	4
P value	0.001

Social constraints

No program works in vacuum. The social system in which a program must work often may impede effective functioning of the program. The following constraints were identified and ranked by the program officials.

Table 11: Social constraints as perceived by the program officials

n=40

Constraints	Mean Rank*	Rank
Less accessibility to other government programs	4.7	I
Lack of direct communication with beneficiaries by other program officials (other than Nutrition Volunteer)	3.9	II
Low literacy of the Nutrition Volunteer	2.9	III
Lack of Self Help Groups in some villages to spread the program	1.8	IV
Rigid norms of the social system regarding food habits.	1.7	V

*Mean rank based on Friedman test

Among different social constraints mentioned in Table 11 less accessibility to other Government programs was found to be most severe (mean rank=4.7). It is because malnutrition is a multidimensional issue. Accessibility to other services like adequate sanitation, safe drinking water etc. is also very much essential to attain nutritional security. Lack of direct communication with beneficiaries by other program officials other than nutrition volunteer was second most severe constraint (mean rank=3.9), It was because most of the beneficiaries were from SC/ST caste, the language being Lambani, other program officials were facing communication gap with beneficiaries to certain extent.

Table 12. Friedman test for social constraints

Category	Value
Test statistics	253.801
df	4
P value	0.001

The details of Friedman test for social constraints are given in Table 12. The test statistic value obtained was 253.801 and its level of significance was 0.001 which indicated that differences are highly significant.

Technical constraints

Constraints related to information generation, processing and dissemination were considered as technical constraints. These constraints were identified and ranked by the program officials.

Table 13: Technical constraints as perceived by the program officials

n=40

Technical constraints	Mean Rank *	Rank
Lack of detailed package of practices on Nutri-Farming systems	**4.21**	I
Lack of adequate local literature on nutrition information	3.33	II
Lack of adequate sensitization about nutritional security among key persons in the village	3.11	III
Lack of diet diversification among beneficiaries	2.21	IV
Lack of acceptability of the nutrition information by program beneficiaries	1.18	V

*Mean rank based on Friedman test

Among technical constraints as enlisted under Table 13 lack of detailed package of practices on Nutri-Farming Systems (NFS) was perceived to be the most severe one (mean rank=4.21). It was because of inadequate research and extension in this emerging area. It was difficult to strengthen the agri-nutri linkage interventions under the program without adequate knowledge on NFS. 'Lack of adequate local literature on nutrition information in the dialectical language' was the second most severe constraint (mean rank=3.33), which impeded effective communication.

Table 14. Friedman test for technical constraints

Category	Value
Test statistic	211.702
df	4
P value	0.001

The details of Friedman test for technical constraints are given in Table 14. The test statistic value obtained was 211.702 and its level of significance was 0.001 which indicated that differences are highly significant.

Table 15: Overall constraints as perceived by the program officials

n=40

Categories of constraints	Mean Rank*	Rank
Technical Constraints	3.11	I
Operational constraints	2.28	II
Social Constraints	1.98	III

*Mean rank based on Friedman test

Among different categories of constraints as mentioned in Table 15 the technical constraints were the severe ones (mean rank=3.11). It is necessary to overcome the technical glitch to implement the program effectively. Operational constraints were the second most severe constraints (mean rank=2.28).

Table 16: Friedman test for overall constraints

Category	Value
Test statistics	122.12
df	3
P value	0.001

The details of Friedman test for overall constraints are given in Table 16. The test statistic value obtained was 122.12 and its level of significance was 0.001 which indicated that differences are highly significant.

Many impediments and hindrances were encountered by beneficiaries as well as officials while implementing the KCNM program, since this was the first attempt as a multi-sectoral program. It is essential to identify and manage these constraints so as to keep them below threshold level.

As perceived by the beneficiaries, unavailability of bio-fortified seeds was the most severe operational constraint. It is for the obvious reason that, except the little cultivation of bio-fortified pearl millet (Dhanshakti) in Belagavi region in Karnataka, no other bio-fortified seeds were made accessible to farmers for lack of adequate dissemination in this direction. Lack of complete knowledge about package of practices regarding Nutri-

Farming System was the second most severe operational constraint, since, Nutri-Farming system is an emerging concept, and complete body of knowledge is yet to be developed.

Among social constraints rigid norms of the social system regarding food habits was most severe. It is justified based on the observation during data collection that consuming outside processed food was a kind of taboo in the locality. Among different psychological constraints, negative attitude towards the Government programs was most severe. It was because beneficiaries had carried the experience with other Government programs, wherein the provisions and benefits of the program hardly used to reach the intended beneficiaries.

As perceived by the program officials, coordinating with various program officials and agencies towards improving nutrition status was quite a challenging task. Lacks of political will i.e. local political conflicts and adequate finance were other constraints.

In this regard Barrett (2002) reported that widespread hunger and malnutrition persist today despite considerable growth in per capita food availability. This has prompted an evolving conceptualization of food security and of mechanisms such as comprehensive and convergent programs, to attain and maintain food and nutritional security. Food security needs to be translated into nutritional security with emphasis on agri-nutri linkages and convergence of related sectors.

Facilitating factors for effective implementation of the nutrition program

Some factors that contributed to the effectiveness of the program were identified by interacting with program officials and beneficiaries.

As shown in Table 17, credibility of the message since it was delivered by the local person called Nutrition Volunteer was the most facilitating factor as expressed by 75 percent of beneficiaries, followed by family counseling approach which opens up the real issue of malnutrition within the family which was found to be facilitating by 62 percent of beneficiaries.

'Advice on dietary practices to reach balanced diet within the existing income pattern' was felt as facilitating factor by 57 percent of beneficiaries since it was a cost effective. Free energy dense food prepared from locally produced agricultural commodities were perceived as facilitating by 54 percent of beneficiaries since it was free of cost, tasty and had utility in reduction of malnutrition.

Table 17: Facilitating factors as identified by the program beneficiaries

n=80

Facilitating factors as perceived by the program beneficiaries	Most important		Moderately important		Least important	
	f*	%*	f*	%*	f*	%*
Credibility of message delivered by local Nutrition Volunteer	75	93.75	3	3.75	2	2.5
Family Counseling approach	62	77.5	12	15	6	7.5
Advise on dietary practices for balanced diet within budget	57	71.25	14	17.5	9	11.25
Energy Dense Food prepared from locally produced agri commodities which was free of cost, tasty and had reduced malnutrition	54	67.5	17	21.25	9	11.25

*f=Frequency, %=Percentage

According to Table 18 among the facilitating factors as perceived by program officials,' convergence between various ongoing nutrition related programs' was most facilitating as stated by 85 percent of respondents. 'Involvement of local NGO as implementing partner helped for 'better reach' and 'efficient implementation' was the second most facilitating factor as perceived by the 77.5 percent of program officials. Involvement of all local SHGs was found to be most important facilitating factor by 75 percent of officials, since it helped in networking for enhanced outreach of program benefits. Regular monitoring and evaluation which helped to patch up the weakness recognized from time to time was found to be most important by 70 percent of officials.

Table 18: Facilitating factors as identified by the program officials

n=80

Facilitating factors	Most important		Moderately important		Least important	
	f *	%*	f *	%*	f *	%*
Convergence between nutrition related departments/programs	34	85	4	10	2	5
Involvement of local NGO as implementing partner	31	77.5	5	12.5	4	10
Involvement of all local SHGs.	30	75	7	17.5	3	7.5
Regular monitoring and evaluation	28	70	3	7.5	9	22.5

*f=Frequency, %=Percentage

CONCLUSION

Among different operational constraints, un-availability of bio-fortified was the major one followed by lack of adequate knowledge about Nutri-Farming systems. 'Untimely arrival of Energy Dense food' was ranked least by the farmers as it was delivered in time by Nutrition Volunteers. 'Rigid norms of the social system regarding food habits' were considered as the major constraint among the social constraints, because it is the

hidden threat to diversify the dietary basket. Food choice was based on social approval. Majority of local NGOs and SHGs were involved along with advisory services being given in Gramsabha meeting, hence lack of social networking in the program as constraint was considered as not severe. General negative attitude and apathy towards Government programs in general were considered as the most severe constraint among psychological constraints, since in that locale the benefits of other Government programs were hardly reaching the beneficiaries. Mental barrier that 'malnutrition is inevitable in poverty' was least severe since it was largely wiped out by program interventions. Psychological constraints were found to be the most severe among all categories of constraints. Hence there is a need to address these hidden constraints first. Availability of bio-fortified seeds and package of practices about Nutri-Farming System', along with creating positive attitude about Government programs is necessary to overcome the constraints. The findings of the study imply that multi-sectoral approach with Public Private Partnership can be the efficient and effective way to implement Government programs especially agri- nutrition programs. It underlines the fact that training and involving local credible person as communication channel will help to reach the unreached. People's attitude towards Government programs should be changed by implementing them effectively and efficiently. The study throws light on some interventions related to agri-nutri linkages and stresses the need to strengthen the link to wipe out the paradox of agricultural prosperity and alarming malnutrition scenario in India by integrating Nutrition and Agriculture and related sectors via Gender. There is need for mass awareness programs on bio-fortified crops and foods along with their availability and accessibility.

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