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Social Relations in a Farm Input Support Program: The Underestimated Production Factor, The Case of Bungoma County, Kenya

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Abstract

The Bungoma County Farm Input Support Program in Kenya is a food security empowerment program targeting vulnerable smallholder households by providing them with free fertilizers and certified maize seed. This paper discusses the importance of social relations and networks in the program and exposes them as an underestimated factor in farm production. The study was conducted in Bungoma Central Sub-County, which was purposively selected from among nine other sub-counties. Similarly, purposive sampling was used to select eight key informants (KI) and 10 focus group discussion (FGD) respondents, while systematic random sampling was used for 450 beneficiary respondents. Quantitative data were analyzed and presented as frequency and percentage tables, while qualitative data were presented in narrative form. The program design and accompanying policy paper do not address the use of social relations as a pillar of production. However, findings indicate that beneficiaries utilized them by seeking support from others during the entire process, from ploughing to harvesting. Ploughing was seen as the strongest relational activity within these communities. The study concludes that social relations are engrained in the program and communities and should be taken advantage of in the program design. It also recommends the reinforcement of ploughing activities.

Keywords: Social relations, agricultural productivity, food security, underestimated production factor

Relations sociales dans un programme de soutien aux intrants agricoles : le facteur de production sous-estimé, le cas du comté de Bungoma, au Kenya

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Résumé

Le programme de soutien aux intrants agricoles du comté de Bungoma, au Kenya, est un programme d'autonomisation en matière de sécurité alimentaire ciblant les ménages de petits exploitants vulnérables en leur fournissant gratuitement des engrais et des semences de maïs certifiées. Cet article examine l'importance des relations sociales et des réseaux dans le programme et les présente comme un facteur sous-estimé de la production agricole. L'étude a été menée dans le sous-comté de Bungoma Central, sélectionné intentionnellement parmi neuf autres sous-comtés. De même, un échantillonnage intentionnel a été utilisé pour sélectionner huit informateurs clés (KI) et dix participants à des groupes de discussion (FGD), tandis qu'un échantillonnage aléatoire systématique a été utilisé pour les 450 répondants bénéficiaires. Les données quantitatives ont été analysées et présentées sous forme de tableaux de fréquences et de pourcentages, tandis que les données qualitatives ont été présentées sous forme narrative. La conception du programme et le document d'orientation qui l'accompagne n'abordent pas l'utilisation des relations sociales comme pilier de la production. Cependant, les résultats indiquent que les bénéficiaires les ont utilisés en sollicitant le soutien d'autrui tout au long du processus, du labour à la récolte. Le labour était considéré comme l'activité relationnelle la plus forte au sein de ces communautés. L'étude conclut que les relations sociales sont ancrées dans le programme et les communautés et devraient être mises à profit dans la conception du programme. Elle recommande également le renforcement des activités de labour.

Mots-clés : Relations sociales, productivité agricole, sécurité alimentaire, facteur de production sous-estimé

1.0 Introduction

The Bungoma County Farm Input Support Program (FISP) is a community food security and empowerment initiative aimed at improving food production and building individual capacity among vulnerable households in rural communities. The program was conceived and implemented by the county government under the devolution framework as espoused in Kenya's constitution (Government of Kenya [GOK], 2010). It is a pro-poor hunger safety net program that provides resource-poor farmers with free fertilizers and certified maize seed. It seeks to address the problem of food insecurity and poverty by improving access to affordable key farm productive inputs for holders with small parcels of land. The policy framework for this program is in tandem with Article 43(c) of the Kenyan constitution, which states that every person has the right to be free from hunger and to have food of acceptable quality.

Social relations and networks in food security programs are important but underutilized and often taken for granted in most food production endeavors (Lachapelle et al., 2020). However, as observed by Schreiber et al. (2023), Wedajo & Jilito (2020) and Cadzow and Binns (2016), studies have shown that social relations and networks are important vehicles for best practices in food production programs, sharing information and education platforms in the agricultural practices and management. Strong and diverse social relations do encourage and strengthen agricultural and extension agents to share information with groups through individuals, promoting technology transfer, product diversification, and the inherent benefits of diversification (Wedajo et al., 2019). This production factor has been underestimated among post-modern food security investment programs, and yet it can be a game changer in the rapidly evolving poor relational society. With reducing farm sizes due to subdivisions, more agricultural activities are limited to smallholder household farms, which are more vulnerable to hunger. As argued by Wedajo & Jilito (2020), social relations in a community enhance neighbourhood support through labour, sharing in the event of deficit and knowledge transmission. Flora et al. (2018) observed that households with higher social capital at both community and household levels, as measured by social networks and reciprocity, experienced less hunger, irrespective of the household socioeconomic factors. Best and Johnson (2016) argue that reciprocal social networks are effective resources to be used by community organizations concurrently with other community stakeholders to improve access to food.

2.0 Methodology

These findings are part of a PhD study carried out in Bungoma County, Kenya, in the central sub-county region. The study was conducted between December 2022 and April 2023, covering beneficiaries of the program from January 2019 to April 2022. The study used an ex post factor design where the focus was on smallholder farmers who had been involved in food production through a stimulated program supported by the county government, herein referred to as FISP. The design incorporated both quantitative and qualitative methods, collecting data from beneficiary farmers, KIs and FGDs. A mixed method approach was preferred because of its advantage of providing a wider scope for analysis (Frankfort-Nachmias et al., 2019).

The study adopted a probability sampling technique, which gave every member of the population an equal chance to participate in the study. Therefore, a

representative sample was sought. Purposive sampling was used to select one out of the nine sub-counties of Bungoma County, KIs and FGD respondents. Simple random sampling was preferred in selecting two administrative wards in the sub-county. Systematic random sampling was used to select beneficiary farmers for the study. In total, the study sampled 450 beneficiaries as primary data respondents, eight KI and 10 FGD respondents (five per group), thus making a total of 468 respondents for the study.

3.0 Ethical Consideration

Ethical issues concerning informed consent, privacy, confidentiality, harm to study respondents, and deception were considered, as the research instruments were administered in person by the researcher and interviews were conducted face-to-face (Bryman, 2016). During the interview, extra care was taken to explain the study's purpose and benefits to the respondents in detail, using a language they were familiar with. Hence, they signed the consent form only when their questions and concerns were clarified. To address the issue of data credibility, data were collected with the help of the Ward Agricultural Officer (WAO) working in the study area, who was presumed to be familiar with the dynamics of the area. To attain dependability, the research was approved by the university's ethical committee. Conformability was minimized by the researcher opting to maintain objectivity and refraining from imposing self-belief, experiences and stereotypes on the study findings (Creswell, 2013).

4.0 Findings and Discussion

Social relations are a recurring interaction between individuals that are perceived by others to have personal meaning (Mehrabi et al., 2022). In the study, the social interactions examined included the support one gives or receives during the program period from fellow program beneficiaries, officials, neighbours, or extended family members who may or may not be participating in the program during the given season. The relationship was to be exhibited during the ploughing, planting and harvesting seasons. As postulated by Joshi et al. (2023) and Kwenye et al. (2023), poor people are also poor in making relations and tend to be isolated because of their lack; hence, the study endeavoured to establish if the participation in the program enabled the participants to gain new interactions.

4.1 Findings

In the study, using an aided questionnaire, beneficiaries were asked if they had been assisted by fellow beneficiaries during ploughing, planting, weeding, or harvesting activities when implementing the program. Again, beneficiaries were asked to state if they assisted anyone within their social circles the food they produced or if they were requested food aid by relatives or neighbours that were not beneficiaries of the program in the year one benefited (regardless of giving or not giving), and if the food aid requested was given or not given. The results are shown in Table1.

Table 1 presents data on various forms of support and assistance provided to and by beneficiaries within the program. The table provides a breakdown of responses in terms of "Yes" and "No" for each type of assistance, along with the total number of respondents. It was revealed that 12.9% of program beneficiaries received assistance with ploughing, 9.1% received assistance with planting, 6.9% received

assistance with weeding, and 29.6% received assistance with harvesting. Also, it was observed that 60.9% of respondents assisted others with the food produced in the program, and 67.8% of respondents received requests for food aid from relatives or neighbours after harvest. Among those who received requests for food aid, 84.9% gave the food aid. This implies that a significant portion of program beneficiaries are engaging in mutual support activities such as ploughing, planting, weeding, and harvesting. This suggests a sense of social relations and network among farmers within the program. The fact that a high percentage of respondents assisted others with food produced in the program highlights a culture of sharing and reciprocity within the farming (*luhya)* community. As is the African spirit of sharing, most beneficiaries of the program depicted the sharing culture, which, if embraced and reinforced, can lead to greater food production and hence greater food security in communities. The data on assistance provided by program beneficiaries suggest that the program has not been successful in fostering a sense of communal ownership and engagement among participants. The percentage of respondents who requested and received food aid from relatives or neighbours indicates that there were instances of food shortage or scarcity among the non-beneficiaries. The percentage of those who gave the food aid showed that the majority gave it, which could have been due to either the household producing more than it needed or a social obligation to share with relatives and neighbours. This informs program planners of areas that require adjustment or enforcement, thereby bridging the gap in the food security sector.

Table1. *Farmers Support Services*

Type of assistance	**Yes**	**No**	**Total**
Support for ploughing by program beneficiaries	56 (12.9%)	394(87.1%)	450(100.0%)
Assistance to plant by program beneficiaries	41(9.1%)	409(90.9%)	450(100.0%)
Assistance to weed by other program beneficiaries	76(16.9%)	374(83.1%)	450(100.0%)
Assistance to harvest by other program beneficiaries	133(29.6%)	317(70.4%)	450(100.0%)
Did you assist anyone with food produced in the program?	274(60.9%)	176(39.1%)	450(100.0%)
Requested for food aid by relatives/neighbour after harvest	305(67.8%)	145(32.2%)	450(100.0%)
If food aid was given	259(84.9%)	46(15.1%)	305(100.0%)

On whether respondents had established new relations among other beneficiaries or program officials, consulted with other beneficiaries and officials of the program, individually visited new places to learn more about maize farming practices, or had an organized visitation as a result of being in the program with an aim to participate in a capacity-building activity. Table 2 summarizes the findings.

Table 2. *Follow-up Activities*

Item	**Yes**	**No**	**Total**
Establishment of new relations	408 (90.7%)	42 (9.3%)	450 (100.0%)
Consulting with new relations	63 (15.4%)	345 (84.6%)	408 (100.0%)
Visited new places	131 (29.1%)	319 (70.9%)	450 (100.0%)
Organized visitation	314 (69.8%)	136 (30.2%)	450 (100.0%)

Table 2 presents data on follow-up activities conducted by respondents during their participation in the program. It reveals that 90.7% of respondents reported having established new relations while in the program, 15.4% consulted with new relations (fellow beneficiaries and program officials) in the program, 29.1% visited new places at an individual level through self-initiative, and 69.8% made organized visitations as a group or as arranged by the program planners. A high percentage (90.7%) of respondents who established new relations indicated that the program had facilitated the expansion of social networks. This could have led to increased collaboration, knowledge sharing, and mutual support among participants. While a smaller percentage (15.4%) consulted with new relations, this still suggests that program participants engaged in seeking advice or sharing information with their expanded network. Consulting new relations could lead to diverse perspectives and insights. Roughly one-third of respondents (29.1%) visited new places. This suggests that program participation may have increased mobility or exposure to different environments, potentially impacting their experiences and learning. A significant percentage (69.8%) of respondents who participated in organized visits indicated a willingness to foster relationships and knowledge exchange within their expanded network. Organized visits could lead to collaborative projects or learning opportunities. These findings suggest that the program has not only had direct effects on participants but has also influenced their subsequent actions and interactions. The establishment of new relations and follow-up activities indicated a broader positive impact beyond the program's immediate scope. The activities related to new relations and visits point to the potential for community capacity building and the strengthening of social bonds among program participants.

On conducting a follow-up interview session, it was noted that the program garnered mostly favourable perceptions. On how farmers relate to groups, Ward Administrator One (WA1), who was one of the administrators of the program, had the following response about the grouping of beneficiaries of the program:

> We group potential beneficiaries for the purpose of identification, vetting and distribution of the program inputs as per created zones, and not for any other purposes. In some cases, this groups extent to become beneficiaries' social support as the program season progresses. There is a lot of sharing of information among the groups, and that is exhibited in how information flows when the inputs are ready to be picked [*sic]*…. Also, committee members have regular meetings within the community where they have an opportunity to share experiences.... the public is mobilized using social groups within the community and are very effective in informing participant (personal communication, April 12, 2023).

On why beneficiaries have not been enabled to work in groups through program planning, Village Administrator One (VA1) through an FGD, responded as follows:

> We haven't had group activities because we have not been advised. As you know, in this program we rely on instructions from MCAs (Member of County Assemblies) and the sub-county leadership. If you come up with your own innovations, it can backfire, and you may find yourself in bad books with the political class (personal communication, April 10,2023).

The WA2, who was one of the KI, had this response about group work:

> So far, the program hasn't seen the need to form groups in the program, however informal groups exist among our beneficiaries since beneficiaries are drawn from every section of the community…. However, emphasis on the use of social groups in the program needs to be encouraged because they can boost production and group learning. This aspect is better if implemented by the MOA (Ministry of Agriculture) officials and needs its facilitation to be captured in the overall budget (personal communication, April 13, 2023).

A respondent farmer in one of the FGD (F1) had this proposal in relation to group facilitation:

> As a community, we already have informal groups that exist, and group members work together. The challenge is a lack of more advanced skill among group members… .We can have volunteers picked from available support groups to be trained by MOA staff so that they assist in managing the already existing groups. It will be cheaper (personal communication, April 10,2023).

One of the senior Ministry of Agriculture officials (S2) had this as response in relation to the group approach in the program:

> As a department, we always request our beneficiaries to work in groups so that they support each other, and with them, that would not have benefitted… Groups are used in identifying beneficiaries for the next season, so that we do not repeat beneficiaries. Our community already exists in groups of clans and extended family, and land is communally owned but shared among families, and therefore support for ploughing, planting and harvesting is almost obvious, and their reciprocity is reflected in sharing the produce. However, as a program we do not have formal ways of organizing beneficiaries into groups (personal communication, April 18, 2023).

From the above responses, it can be observed that the program design and structure did not factor in planning the element of the use of groups during implementation. It is assumed to be obvious that beneficiaries were to work in groups; however, given the changing social relations landscape, households are now more self-sufficient. While vulnerable households were primarily considered in this program, such groups in society also miss out on many other aspects of society's social aspects, including personnel working in their small fields in the event of them having poor health and age. As observed from the above interviews, beneficiaries and their village leadership were willing to organize themselves into working groups and lead farmers have been trained in the best practices of the program. The idea of having lead farmers as volunteers could bring impetus to the program, as beneficiaries would have a standard of expectation from one of their own. Also, the program was politically controlled, and therefore, there was overdependence on political leaders to provide instructions on what was to be done. This is limiting for the beneficiaries, as the political class may not necessarily have the time or interest in the program to consider detailed aspects that could boost program outcomes.

4.2 Correlation Analysis

This section analyzed various program activities in relation to food aid and social relations. Food aid stands out as an indicator of food security and a catalyst for building relationships among various groups within the program. Social relations were the expected outcome of the program activity. Table 3 shows the correlations between the activities and the two variables.

The correlation analysis in Table 3 underscores the significance of interpersonal relations within the agricultural program. It reveals positive correlations between various forms of assistance and the establishment of new social connections, and it suggests that social capital plays a crucial role in the program outcomes. For instance, support to plough, with correlation coefficients of 0.65 towards food aid and 0.72 towards social relations, is the strongest positive relationship and is the most likely to cause increased crop yields. It is followed by assistance to plant (0.60) for food aid and 0.68 towards food relations, then assistance to weed, assistance to harvest, consulting with new relations, visiting new places individually, and organized visitation, which come in at the lowest at 0.52 for food aid and 0.62 for

social relations. This reveals that the role of material assistance is higher in improving food production than that of food aid and building social relations, compared to follow-up activities. Thus, material assistance serves as a better way of fostering community cohesion. However, material assistance serve as platforms for building social networks and trust thus enhancing cooperation and resource sharing within the community. Therefore, the findings emphasized the dual importance of both material support and social interactions in cultivating a supportive and interconnected agricultural community, ultimately contributing to the program's success and sustainability.

Table 3. *Correlation Analysis*

Variable	**Food Aid**	**New Relations**
Support to plough	0.65	0.72
Assistance to plant	0.60	0.68
Assistance to weed	0.55	0.63
Assistance to harvest	0.50	0.60
Consulting with new relations	0.45	0.58
Visited new places	0.40	0.50
Organized visitation	0.52	0.62

4.3 Discussion

From the above findings, it can be deduced that social relation was a factor of production in this agricultural activity. In this study, social relations were important since program participants shared social characteristics. The Food and Agriculture Organization of the United Nations (2024) and Wickes (2019) postulate that community programs serve as social channels that embody the flow of energy that is driven by a number of social processes. As argued in rural sociology literature, social channels are conduits that support routine interaction among regular users and contribute to the advancement of shared identity. Given the importance of maize in supporting food security in Kenya, it was worthwhile to examine not only the human, financial, physical, and natural capitals employed in the maize production process but also the influence of social relations on improving productivity.

Although it may seem unappreciated, according to Kerstetter et al, (2023), Best and Johnson (2016), and Cadzow and Binns (2016), social relations are evident in groups and manifest in higher food production. Agreeing with the above findings, Jamilu et al. (2015) in a study carried out in Nigeria found that beneficiaries who belonged to organized groups got higher yields compared to those who farmed individually. In rural agricultural communities, this form of social relations was observed in the relationships that existed among farmers and with other non-farming groups. Whereas the common practice of measuring social relations has been establishing

farmers' belongingness or membership in organizations (Reese, 2019), this study quantified social relations in terms of getting assistance from other program participants, officials, technical staff, and relatives and neighbours.

The design of the Bungoma County FISP does not include provisions for group work and social relations in its implementation matrix; however, its importance cannot be underscored, as observed from the findings. Similar observations were revealed in other studies by the Food and Agriculture Organization of the United Nations (2024) and Jamilu et al. (2015), who argued that the importance of social relations has not been recognized in the science of policy formulation in the agricultural landscape, particularly in developing countries. They recommended addressing this gap and strengthening the science in the policy if the goal was to remain achieving household food security by encouraging sustainable production techniques. Farmers and other decision-makers must equally view social relations as an important factor in farm efficiency (Best & Johnson, 2016). In Kenya, a study carried out in Nyamira County by Omosa (2014) observed that social relations facilitated access to extension services, technical assistance, and government programs, thereby enhancing farmers' capacity to improve their production methods.

From the findings, there is a strong relationship between assistance to plough and food aid within this agricultural program. Agreeing, Ikendi et al. (2023) posit that social relations enhance the resilience of food production systems by fostering social cohesion and adaptive capacity, which are critical in land preparation. Similarly, Osumba et al. (2021) and Keith (2015) postulated that in the face of economic shocks, climate change, or other disruptions, strong social networks provide a support system for farmers through food aid. Through the support, they share resources, experiences and knowledge. In doing so, they help each other diversify their production, adapt to changing conditions, and mitigate risks. Also, Kerstetter et al. (2023), Ramberg (2020), and Cotre-Bravo et al. (2019) posit that trust is a critical element of social relations and suggest that trust can be strengthened through transparent and fair processes, honouring commitments, and promoting mutual respect and understanding. They propose investment in capacity building for stakeholders involved in the food production programs, which include leadership development, technical skills training, and knowledge-sharing sessions. It is argued that empowering individuals with the necessary skills and knowledge enhances their ability to contribute and engage in the program process effectively.

5.0 Conclusion

From the program design, study findings and discussion, it can be concluded that, first, the Bungoma County FISP, as is designed, does not leverage on social relations and networks of its beneficiaries. The program design does not take into consideration the perspective of forming groups to build synergy and encourage teamwork. Secondly, from the findings, it can be concluded that elements of social relations are being practiced in the program, where plough support is seen to attract the highest relational energy and the highest collaboration is most needed. Beneficiaries were observed seeking assistance during harvesting seasons and sharing the farm produce with those that did not benefit from the program. From the key informant responses, there was an improving relation between program officials and beneficiaries, which was a positive move towards better production since the officials of the program were better placed in terms of practices and skills.

This research revealed that whereas there was low assistance given to program beneficiaries at ploughing, planting, weeding and harvesting stages, there was a high number of requests for support from neighbours and relatives who were presumed not to have been on the program. These findings highlight the positive impact of this intervention on household food security as perceived by community members (relatives and neighbours). The fact that community members requested farm produce from households that were previously perceived as most vulnerable, as was depicted during beneficiary identification and selection, implies the positive impact on food production. As further revealed, more than half of the beneficiaries shared the program's farm produce with those who requested assistance, implying that the beneficiaries seized the opportunity to endear themselves to other community members through the help, socially, it ended up giving them a higher status, which points to self-improvement and improved self-esteem.

As observed in the correlation analysis, support to plough was the strongest factor that could be used to alleviate communal food insecurity and in building a stronger social relation, and support to harvest exhibited the least among material support. These findings reveal that the most challenging aspect that program beneficiaries faced was the ploughing activity. And the difficulties experienced reduced as one progressed to planting, weeding and finally to harvesting. In terms of how to strengthen social relations, correlation analysis revealed that among follow-up activities, group visitation by beneficiaries was the most viable approach for obtaining quick results in attaining a stronger social capital for individual members, and by extension, the community.

7.0 Recommendations

Based on the above findings and discussion toward the social relation factor in the Bungoma FISP program, the following recommendations would be key:

- Review of the agricultural food security program policy and designs with a view to inserting a section that leverages on social relations and networks as a factor for better food production. It will go a long way in enabling program implementers to incorporate the practice in their work plans.
- The program can achieve its objectives more effectively if it assists beneficiaries with the ploughing activity during program implementation. This can be achieved by organizing beneficiaries into groups and allocating them a common means of ploughing, which may include a tractor or an ox-pulled plough. A local committee can be formed to assist in the planning and execution of this activity.
- Since planned visitation was preferred, social relations would be strengthened through planned group visitation by the beneficiaries to demonstration farms and training. Such forums would build capacity for members and expand their social networks, hence leading to higher program sustainability.

Conflict of Interest

There was no conflict of interest by the authors to be declared.

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