

Influence of Donor Aid on Self-Reliant Farming among Smallholder Farmers: A systematic Literature Review

¹Matthew John Zaume, ²Billiah Gisore, ³Daniel M. Kitonga

¹PhD Candidate, IST, Tangaza University; ²Lecturer, Kisii University; ³DVC Academics, Research and Student Affairs, Tangaza University

Abstract

Smallholder farming plays an important role in rural livelihoods and food security in South Sudan. This is particularly so in areas like Yambio County where agricultural production comprises a critical source of household food and income. Even so, smallholder farmers continue to encounter challenges related to insufficient financial resources, constrained access to agricultural inputs, inadequate technical support, and limited agricultural knowledge. Consequently, donor-supported agricultural interventions have become critical in strengthening the productive capacities and resilience of farmers. This study through a review of literature examined the influence of donor aid on self-reliant farming among smallholder farmers. Key variables of donor financial inflows, donor technical assistance and donor transfer of agricultural knowledge and self-reliant farming guided the study. IMRAD format of research was employed in the study where concepts were introduced, the methods were highlighted, the results presented from literature and also a discussion of the organizational theory and collective action theory. The two theories are of the view that donor support is most likely to enhance self-reliant farming in a situation where resources, knowledge, and technical assistance are sufficiently pooled, coordinated, and managed via farmer groups that are well organized. The theories further indicate that donor support should strengthen the collective capacity, organizational structures, and decision-making abilities of the farmers. This enables farmer groups to sustainably carry out agricultural production when donor assistance ceases. The review demonstrated that donor financial inflows, technical assistance, and transfer of agricultural knowledge in general promote the productivity of smallholder farmers, their adoption of improved technologies, and access to inputs, and farming skills. The study further showed that donor support is more likely to lead to self-reliant farming when it develops farmers' long-term productive capacity and facilitates them to independently use acquired resources, skills, and knowledge. It was concluded that donor aid promotes self-reliant farming when financial inflows are integrated with technical assistance and agricultural knowledge transfer.

Keywords: donor aid, donor financial inflows, technical assistance, agricultural knowledge, self-reliant farming, smallholder farmers, Yambio County, South Sudan

Introduction

Agriculture is key to livelihoods and food security in South Sudan. Therefore, agricultural programmes focus on enhancing production and resilience among farming households (Ministry of Agriculture and Food Security [MAFS], 2026). Nevertheless, farmers encounter climate, economic and conflict-related constraints (World Bank, 2026). These constraints may disrupt productivity and undermine rural livelihoods. These challenges have heightened the significance of donor support in agriculture. Current interventions offer inputs, training, technology and institutional support (MAFS, 2026). For instance, the Resilient Agricultural Livelihoods Project (RALP) funded by the World Bank supports access to quality seeds, technology and mechanization (MAFS, 2026). It also offers technical aid to agricultural institutions. These interventions are aimed at strengthening the productive capacity and resilience of the farmers.

Donor aid is important when the end goal is self-reliant farming. In this study, self-reliant farming refers to the ability to sustain agricultural productivity with minimal external support. It includes access to productive resources and appropriate farming skills. It further includes the ability to maintain agricultural operations for the long-term. This concept aligns with development methodologies that emphasize resilience and sustainable livelihoods (World Bank, 2020). Donor aid can assume various forms. These comprise financial resources, technical assistance and agricultural knowledge. Each form may influence the productive capacity of the farmers in various ways. This

study therefore looks into three dimensions of donor aid including donor financial inflows, donor technical assistance and donor transfer of agricultural knowledge.

In regard to donor financial inflows, financial resources can be helpful to farmers in securing agricultural inputs. They can also support investment in farming operations (Abolade et al., 2025). South Sudan evidence demonstrates that donor-supported financial interventions may help households to acquire assets and essential farming inputs (World Bank, 2024). Agricultural programmes equally avail productive resources to vulnerable households involved in farming activities (MAFS, 2026). Financial aid may hence support the capacity of the farmers to sustain agricultural production. Donor technical aid on the other hand provides farmers with practical agricultural skills. It can enhance production and farm-management operations. RALP for instance trains farmers in good agronomic practices (MAFS, 2026). The project further offers technical support to agricultural institutions (FAO, 2024).

Donor transfer of agricultural knowledge, which is the third dimension of donor support equips farmers with agricultural knowledge. Agricultural knowledge comprises information that is critical in farm production and management. It also comprises knowledge of agricultural technologies and risk management. The agricultural programmes in South Sudan seek to enhance farmers' knowledge and skills (MAFS, 2026). Knowledge-based practices are critical in responding to climate-related challenges that farmers encounter (Mosha & Ngulube, 2025).

Methodology

The study adopted the Introduction, Methods, Results, and Discussion (IMRAD) structure. The approach involves introducing the study variables, highlighting the methodology, presenting the literature review results and the discussions. The study adopted a systematic literature review design to examine the influence of donor aid on self-reliant farming. The review focused on donor financial inflows, donor technical assistance, and donor transfer of agricultural knowledge. The review applied explicit inclusion and exclusion criteria. Literature was included when it examined donor assistance, agricultural knowledge, technical assistance, or financial support. Studies that did not have a clear link to agricultural donor support, smallholder livelihoods, or self-reliance were excluded.

Theoretical Framework

Collective Action Theory

Collective Action Theory (CAT) originated by Olson (1965) and later expanded by Ostrom (1990), details how individuals with shared interests work together to achieve common goals that are difficult to realize independently. Olson (1965) reasoned that collective action can be weakened by the free-rider problem. This makes effective leadership, trust, incentives, and accountability critical for successful partnership. Furthermore, Ostrom (1990) indicated that communities can sustainably manage shared resources through participatory management, locally developed rules, monitoring, and conflict-resolution methods. The theory makes the assumption that individuals are willing to partner when there are effective institutions, trust, and appropriate incentives. That community participation enhances ownership and sustainability of development projects.

The theory is relevant in this study since donor aid is usually availed through farmer cooperatives, farmers' organizations, and community-based groupings. These collective institutions enable smallholder farmers to gain access to donor financial inflows, technical assistance, and benefit from agricultural knowledge transfer. This strengthens agricultural productivity and self-reliance. Therefore, Collective Action Theory presents the theoretical basis for explaining how donor aid influence self-reliant farming among smallholder farmers.

Organization Theory

The theory was advanced by Charles Handy (1999) and it states that organizational effectiveness relies on the interplay between people, organizational systems, leadership, and the surrounding environment. Handy argues that successful organizations require active member participation, sound leadership, effective governance, and an organizational culture that promotes cooperation and accountability. The theory assumes that committed members, democratic leadership, clearly articulated roles, and suitable organizational structures improve organizational performance and sustainability (Handy, 1999; Handy, 2024).

The theory emphasizes on various leadership and management approaches that influence organizational effectiveness. In relation to farmer organizations, democratic leadership, member participation, transparency, and teamwork strengthen decision-making, management of resources, and institutional sustainability. Poor leadership and inactive membership on the other hand lower organizational performance (Shier & Handy, 2020; Abdala et al., 2021).

The relevance of the theory in this study is founded on the fact that donor aid is to a large extent implemented through farmer groups, cooperatives, and community-based organizations. Effective organizational systems enable

these groups to manage donor financial inflows transparently, coordinate technical aid efficiently, and facilitate the transfer of agricultural knowledge among members. As a result, Organization Theory describes how strong leadership, active participation, and effective governance enhances the use of donor resources, improve institutional capacity, and strengthen self-reliant farming among smallholder farmers. Hence, the theory complements Collective Action Theory by emphasizing that sustainable agricultural development is dependent not only on external donor aid but also on the effectiveness of local farmer organizations.

The Empirical Review

The review offers evidence that the three dimensions of donor support comprising financial inflows, technical assistance, and agricultural knowledge transfer may influence agricultural productivity and livelihood outcomes of smallholder farmers. The following studies were particularly relevant to the study.

Ambler et al. (2020) studied the effects of cash transfers and farm management information on farming outcomes among smallholder farmers in Senegal. The study used a randomized assessment whereby farmers received advisory visits integrated with individualized farm management plans, or the similar interventions together with a cash transfer. The results showed that farmers who received cash transfers reported increased crop production and livestock ownership compared to those that received advisory services only. The positive outcomes were associated with heightened investment in productive agricultural operations, including livestock and farm equipment. Moreover, the study established that some of the gains in livestock ownership continued beyond the initial intervention period. These outcomes demonstrate that financial inflows can relax liquidity challenges and facilitate smallholder farmers to acquire productive assets. As a result, donor financial support may play a part in building the farmers' capacity to carry out agricultural activities and develop productive resources that support increased independence. The study outcomes suggest that donor financial inflows can lead to self-reliant farming by providing farmers with the resources critical for farmers to invest in their own productive activities.

On his part, Kamya (2015) investigated the benefits that farmers gained from a donor-funded agricultural value-chain operations among vanilla and hot-pepper farmers in Kasese, Uganda. The study used survey data from 125 farmers belonging to eight farmer groups. Focus group discussions and key informant interviews were also used. The donor-financed programme availed farmers with input loans, extension services, market opportunities and agricultural skills. The results showed that the farmers that participated in the study benefited from the programme through enhanced access to agricultural inputs, skills, extension services, and markets. Even so, sustainability challenges associated with declining vanilla prices were identified. These impacted on the farmer associations' ability to maintain the benefits of the programme after donor support ceased. This thus demonstrates that donor financial support enhances farmers to access productive resources. However, the sustainability of these benefits is dependent on farmers' ability to maintain productive operations beyond the donor-funded intervention. This finding is particularly relevant to the concept of self-reliant farming adopted in the current study. The two studies generally show that financial inflows enhance agricultural investment, production, and productivity and also acquisition of input by smallholder farmers.

Kangogo et al. (2024) examined the effect of farmer training on potato productivity among smallholder farmers in Malawi. The results showed that farmers who took part in training reported increased potato yields compared to those who did not participate. Training participants improved their potato yields by approximately 14%, which was equivalent to an average increase of 1.33 tonnes per acre. The study moreover reported that training farmers had higher annual crop-enterprise revenue than farmers in the comparison group. These results demonstrate that technical assistance in the form of targeted farmer training enhances farmers' knowledge and skills and converts those skills into increased agricultural productivity and farm revenue. Enhanced productivity and revenue can facilitate farmers to reinvest in agricultural operations, acquire inputs, and sustain productivity from farm-generated resources. The findings therefore present empirical support for the reasoning that donor technical assistance contributes to self-reliant farming.

Bunyatta et al. (2015) studied the effect of farmer field schools on soil and crop management among smallholder farmers in Kenya's North Rift region. An ex-post facto research design was used. In its conduct, 360 farmers were targeted and this comprised 180 farmer-field-school participants and 180 non-participants. The researchers evaluated the effect of soil and crop management technologies that were taught through farmer field schools. The findings indicated a statistically significant variations between participants and non-participants in knowledge acquisition, adoption, farming practices, and productivity. The farmers that were exposed to the farmer-field-school approach showed better understanding, adoption, and application of soil and crop management technologies. These

results suggest that technical assistance develops farmers' human capital by transferring practical skills and knowledge that farmers use directly within their own farms. Such capacity building approach is critical for self-reliant farming since farmers become less reliant on external players for routine decisions concerning crop and soil management. In overall, the reviewed evidence demonstrate that donor-financed technical aid reinforces smallholder farmers' productive ability through knowledge transfer, practical training, agricultural extension, farmer field schools, and demonstrations.

Mesfin et al. (2023) studied the effectiveness of various means for transferring agricultural knowledge to smallholder farmers in Ethiopia. The study used a randomized training experiment complemented by focus group discussions, key informant interviews, and a farmer survey. The study compared knowledge transmission via extension agents and model farmers. The results indicated that both extension service officers and model farmers contributed to above-average knowledge transfer. However, learning from extension service officers was significantly more effective as opposed to learning from model farmers. The study findings imply that the channel through which agricultural knowledge is transferred affects the extent to which farmers acquire and retain the important agricultural knowledge. This finding is significant to self-reliant farming since farmers who gain practical agricultural knowledge can make better production decisions and employ enhanced practices without relying continuously on external players.

Waje et al. (2024) examined the impact of agricultural information provision on technology use and crop yield among smallholder cassava farmers in Ethiopia. The study used panel data gathered from 1,040 farmers in 2021 and 2023 and used a randomized controlled trial. Farmers received various forms of agricultural information, comprising agronomic technical information, productivity and profitability information, or a combination of the two. The results showed that agricultural information provision improved the adoption of modern agricultural technologies, the land size allocated to cassava production, and cassava yields. The study shows that transferring relevant agricultural knowledge can influence farmers' production decisions and foster the adoption of improved technologies. Enhanced adoption and productivity can reinforce farmers' productive capacity and offer a basis for generating resources from farming operations. As a result, agricultural knowledge transfer contributes to self-reliant farming by facilitating farmers to adopt enhanced technologies and make informed production decisions as opposed to depending exclusively on external aid. The study findings demonstrate that the transfer of agricultural knowledge enhanced the capacity of the farmers to make production decisions, use enhanced technologies, improve productivity, and increase agricultural income.

The Discussion

The reviewed empirical studies show that donor financial inflows, technical assistance, and transfer of agricultural knowledge contribute to enhanced farming outcomes among smallholder farmers. Even so, their contribution to self-reliant farming is dependent on whether donor interventions develop farmers' capacity to sustain production beyond the period that external support comes to an end. Donor financial inflows primarily address farmers' capital challenges by facilitating them to purchase inputs, livestock, equipment, and other productive assets. Studies in Senegal and Malawi demonstrated that cash transfers increased agricultural investment and production (Ambler et al., 2020).

Donor technical help reinforces farmers' practical skills via extension services, training, demonstrations, and advisory services. Findings from Malawi indicated that farmer training increased potato yields and farm revenue (Kangogo et al., 2024). Such support promotes self-reliance since the acquired skills can be repeatedly used across farming seasons. However, its effectiveness is dependent on the relevance and quality of the training that farmers receive and the ability of the farmers to independently apply the skills. Transfer of agricultural knowledge also influences the ability of the farmers to adopt enhanced technologies and make informed production decisions. Waje et al. (2024) established that agricultural information improved technology use and crop yields in Ethiopia, while Mesfin et al. (2023) showed that effective knowledge-transmission channels enhance farmers' learning. This demonstrates that knowledge represents a sustainable productive resource that remain with farmers even after donor programmes cease. In overall, the evidence shows positive effects of donor support on farming productivity, investment, skills, and technology use.

Conclusion

Donor financial inflows contribute to self-reliant farming by facilitating smallholder farmers to overcome capital challenges, purchase agricultural inputs, invest in productive assets, and increase farm production. Second, it is concluded that donor technical assistance strengthens the capability of the farmers to independently manage

agricultural operations. Training, extension services, demonstrations, and technical information improves the practical skills of the farmers and enhance their ability to adopt appropriate agricultural practices. Technical assistance hence contributes to self-reliance by developing the capacity of the farmers to sustain agricultural productivity beyond the time of donor support.

Third, it is concluded that transfer of agricultural knowledge is a critical pathway through which donor support promotes self-reliant agriculture. Access to the necessary agricultural information facilitates farmers to make informed production decisions, adopt enhanced technologies, control pests and diseases, and enhance productivity. As opposed to financial resources that may be depleted, knowledge and skills can be consistently employed across farming seasons, rendering knowledge transfer particularly critical for long-term self-reliance. In overall, it is concluded that donor support is most likely to enhance self-reliant agriculture when financial support, technical assistance, and knowledge transfer are implemented in a complementary way.

References

- Abdala, E. C., Morais, G. G., & Rebelatto, D. N. (2021). Remuneration strategies related to Charles Handy's cultural typology: A case study in a small digital market business in pandemic times. *Brazilian Journal of Operations & Production Management*, 18(2), e20211194. <https://doi.org/10.14488/BJOPM.2021.040>
- Ambler, K., de Brauw, A., & Godlonton, S. (2020). Cash transfers and management advice for agriculture: Evidence from Senegal. *The World Bank Economic Review*, 34(3), 597–617. <https://doi.org/10.1093/wber/lhz001>
- Ambler, K., de Brauw, A., & Godlonton, S. (2026). Cash transfers, agricultural extension, and productivity: Evidence from Malawi. *Journal of Development Economics*.
- Beaman, L., Magruder, J., & Robinson, J. (2023). Minding small change among small-scale farmers: Evidence from Mali. *Econometrica*, 91(3), 1011–1040. <https://doi.org/10.3982/ECTA18916>
- Beaman, L., Magruder, J., & Robinson, J. (2015). Can network theory-based interventions improve agricultural outcomes? Evidence from farmer field schools in Tanzania. *World Development*, 74, 1–13.
- Bunyatta, D. K., Mureithi, J. G., & Muriuki, A. W. (2015). Impact of farmer field schools on soil and crop management practices among smallholder farmers in Kenya. *Journal of Agricultural Extension and Management*.
- Davis, K., Nkonya, E., Kato, E., Mekonnen, D. A., Odendo, M., Miiro, R., & Nkuba, J. (2012). Impact of farmer field schools on agricultural productivity and poverty in East Africa. *World Development*, 40(2), 402–413. <https://doi.org/10.1016/j.worlddev.2011.05.019>
- Food and Agriculture Organization of the United Nations. (2024). *South Sudan: The Government, World Bank and FAO scale up actions to build farmers' climate resilience in the face of flooding and other disaster risks*. FAO.
- Food and Agriculture Organization (FAO). (2020). *Crop and food security assessment mission to South Sudan*. <https://data.unhcr.org/es/documents/details/28490>

Handy, C. (1999). *Understanding organizations* (4th ed.). Penguin.

- Handy, C. (2024). Managing the dream. In *Learning organizations* (pp. 45–56). Productivity Press. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003578840-4/managing-dream-charles-handy>
- Kangogo, E. K., Otieno, D. J., Okello, J. J., Mwenye, O., & Kapalasa, E. (2024). Effect of uptake of improved seed potato and donor-funded training on smallholder farmers' market participation. *Crop Science*, 64(2), 812–824. <https://doi.org/10.1002/csc2.21118>
- Kangogo, E. K., Otieno, D. J., Okello, J. J., Mwenye, O., & Kapalasa, E. (2024). Impact of farmer training on potato yield: A case of smallholder potato farmers in Malawi. *Frontiers in Sustainable Food Systems*, 8, 1496064. <https://doi.org/10.3389/fsufs.2024.1496064>
- Konja, D. T., et al. (2024). Do outgrower schemes enhance technology adoption and productivity? Evidence from maize farmers in Northern Ghana. *Agribusiness*. <https://doi.org/10.1002/agr.21967>
- Ministry of Agriculture and Food Security. (2024, June 26). *Additional financing, RALP: Stakeholders validate additional financing output agreement to scale up agriculture and livelihoods support in flood affected counties*. Government of the Republic of South Sudan.

- Mesfin, H., Tessema, Y. M., Tirivayi, N., & Nillesen, E. (2023). Effective knowledge transmission and learning in agriculture: Evidence from a randomised training experiment in Ethiopia. *Africa Development*, 48(1). <https://doi.org/10.57054/ad.v48i1.3039>
- Nyamonge, K. (2022). Role of farmer field schools in adoption of innovative rice production practices in Mvomero District, Tanzania. *African Journal of Rural Development*, 7(2), 121-128.
- Olson, M. (1965). *The logic of collective action*. Harvard University Press.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Shier, M. L., & Handy, F. (2020). Leadership in nonprofits: Social innovations and blurring boundaries. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 31(2), 333–344. <https://doi.org/10.1007/s11266-018-00078-0>
- Ssozi, J., Kakooza, T., & Ssekiziyivu, B. (2019). Development assistance for agriculture and agricultural productivity in Sub-Saharan Africa. *World Development*, 117, 1–15.
- Todo, Y., & Takahashi, R. (2013). Impact of farmer field schools on agricultural income and skills: Evidence from rural Ethiopia. *Journal of International Development*, 25(3), 362–381. <https://doi.org/10.1002/jid.1819>
- Tsiboe, F., Osei-Asare, Y., & Zeller, M. (2016). The economic impact of the Cocoa Livelihoods Program in West and Central Africa. *Agricultural Economics*, 47(6), 1–14. <https://doi.org/10.1111/agec.12233>
- Waje, S. S., Shano, B. K., Walelign, S. Z., & Kassie, W. A. (2024). The effect of agricultural information provision on smallholders' technology adoption and yield: Experimental evidence from Ethiopia. *Frontiers in Sustainable Food Systems*, 8, 1421442. <https://doi.org/10.3389/fsufs.2024.1421442>
- World Bank. (2026). *Building South Sudan's homegrown seed industry is creating local opportunities*. World Bank.
- World Bank. (2018). *Innovation, entrepreneurship, positive change. Join the farmer-led irrigation revolution*. World Bank. <https://www.worldbank.org/en/news/feature/2018/09/05/innovation-entrepreneurship-positive-change-join-the-farmer-led-irrigation-revolution>
- World Bank. (2020). *Agriculture for development: World Development Report 2020*. World Bank.

Copyright & License:

© Authors retain the copyright of this article. This work is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.