



Farmer groups and input access: When membership is not enough



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ABSTRACT

This paper explores the efficiency of a targeted fertilizer subsidy program administered differently in two Nigerian states in 2009. An important dimension along which the otherwise similar programs differed was the fertilizer distribution strategy. Fertilizer distribution among program participants was done at the individual level for one set of farmers, while the fertilizer was given indirectly through a group representative for the other set. Where fertilizer was given to a group representative for further distribution to members, relatives of the farm group's president received more bags of fertilizer than others. Where fertilizer was given directly to farmers such results did not obtain. This differential outcome suggests that while groups may facilitate the process of farmer identification and coordination, elite capture and intra group dynamics may affect their efficacy for providing equal access to inputs for members. Two-tier models enable us to model the potentially separate processes that determine participation in the voucher program and the amount of fertilizer received, upon deciding to participate. With intentions to adopt and scale up voucher programs in various food security and poverty alleviation programs across developing countries, it is important to understand when and how farmer groups can affect the successful implementation of such programs.

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Introduction

Farmer groups are considered to be effective mechanisms to increase farmer livelihood (Kruijssen et al., 2009; Bernard and Spielman, 2009). In addition to reducing information asymmetries, farmer group members can pool resources and market their products collectively; overcoming the high transaction costs resulting from their small individual sizes. Farmer groups are also believed to improve member access to resources (such as inputs, credit, training, transport and information), increase bargaining power and facilitate certification and labeling (Bosc et al., 2002). Similarly, collective action, as is possible through farm groups can also reduce individual farmer risk for long-term investments such as those required for perennial crops and capital intensive processing technologies, (Di Gregorio et al., 2004).

Consequently, organized farm groups are promoted as useful avenues for increasing farmer productivity and for the implementation of food security and other development projects. They are particularly favored for dissemination of extension information and inputs as well as for the marketing of agricultural commodities (Davis, 2009). In Nigeria, like many other African countries, there is a strong push for the use of organized groups to implement

development programs. The World Bank-assisted Fadama (I, II and III) are cases in point, as is the fertilizer input voucher program that took place in Nigeria in 2009 and 2010. The ability of a voucher program to improve on the previously government led system in Nigeria has already been demonstrated (Liverpool-Tasie, 2013). However, no studies that we are aware of, have considered the potentially varying experience of different kinds of farmers in a voucher program, conditional on participation. With the current emphasis on using organized groups to improve access to agricultural inputs in many developing countries, it is important and timely to understand the role that group dynamics (e.g. relations between members) play within such arrangements. While groups can be an effective way to coordinate program beneficiaries, ensuring that group characteristics do not limit the benefits that accrue to individual members is important.

Using primary data collected from 1000 households across two states, this study takes advantage of key state level differences in the way organized groups were used in the program to explore the role that farmer clout and intra group dynamics likely played in the implementation of the program. We empirically test for a difference in the quantity of subsidized fertilizer received by participating farmers depending on how subsidized fertilizer was distributed in their farm group. A farmer's decision to participate in the voucher program (receive a fertilizer voucher) and the extent of participation (number of bags of subsidized fertilizer they

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received) are possibly two different processes. Thus, this study uses various two-tier (two-stage) models to explore if and how these intra group dynamics affect participation as well as the extent of farmer participation in the voucher program.

The paper proceeds as follows: “Literature review” provides a brief summary of some relevant literature while “The 2009 Fertilizer voucher program in Kano and Taraba” describes the 2009 fertilizer voucher program in Kano and Taraba states. “Empirical framework” presents the analytical framework and Section 5 discusses the data used. “Conclusion” presents the study results and Section 7 concludes.

Literature review

The case for collective action among farmers dates back to the 1920s. Active debates surrounded whether cooperatives were necessary to unite farmers on a commodity wide basis (for market power and higher returns to agriculture) or whether they were a means to increase competitiveness within the agricultural business system (Staatz, 1989). Though decades of productivity growth and the structural transformation of societies saw less emphasis placed on collective action among farmers, there has been a recent refocus on smallholder agriculture for economic growth and poverty alleviation (World Bank, 2007). This has brought a renewed attention to institutions of collective action like farmer groups stemming from their proposed ability to address market access issues of smallholder farmers (Barham and Chitemi, 2009). Farmer groups are considered an efficient mechanism to improve the marketing performance of small holder farmers which is necessary to improve farmer welfare, food security, rural employment and sustained agricultural growth (Kariuki and Place, 2005; Dorward et al., 2003; Poulton et al., 1998). With the declining role of the state in many developing countries, assisting smallholder farmers to access and participate in various markets is increasingly being promoted as a sustainable approach to addressing problems of global malnutrition and poverty (Fafchamps, 2005; Reardon and Barrett, 2000; Cook and Chaddad, 2000; Von Braun, 1995). Consequently, development agencies geared to improve farmer access to agricultural services and markets are increasingly working through local institutions like farmer groups (World Bank-assisted Fadama (2010), Stringfellow et al., 1997; Davis, 2009).

The literature on farmer groups in developing countries tends to focus on their benefits (Bonin et al., 1993; Dulfer, 1974; Kruijssen et al., 2009; Bernard and Spielman, 2009; Di Gregorio et al., 2004; Marsh and Pannell, 2000; Davis, 2009). Fewer studies have highlighted the challenges associated with farmer groups. These include the potential to exclude some subgroups or members of the community (Arnaiz, 1995; Bebbington et al., 1994; Ashby and Sperling, 1994; Vanclay and Lawrence 1995) as well as complexities added when multiple individuals, rather than a single investor, engage in commercial activities discussed in the agribusiness literature (Cook and Chambers, 2007; Putterman et al., 1985; Fama, 1980). Within these two strands of literature however, limited emphasis is played on the effect of elite capture and intra group dynamics on the potential benefits of farmer groups. Consequently this study contributes to that limited literature by empirically testing for the effect of intra group dynamics on the extent of farmer participation in an input voucher program in Nigeria.

This study also contributes to the literature on agricultural input vouchers in Sub-Saharan Africa. Agricultural input vouchers are increasingly being used across sub Saharan Africa to address problems of low agricultural productivity and food security. In many cases, farmers are coordinated in groups for participation. There has also been a recent increase in empirical studies on the effects of targeted input vouchers across sub Saharan Africa. The

effect of targeted input subsidies on crop production and consequently growth and poverty reduction has been studied (Dorward et al., 2008). Similarly, several studies have looked at the effects of targeted input voucher programs on farmer participation in private markets (e.g. Mason and Jayne, in press Liverpool-Tasie (2012), Ricker-Gilbert et al. (2011) and Xu et al. (2009). Others have evaluated the effect of targeted input vouchers on farmer's timely access to affordable inputs (Liverpool-Tasie (2013) or the political motivation behind the allocation of vouchers (Banful, 2011). However, the role that farmer influence and social capital play in the effectiveness of targeted subsidy programs is an area largely unexplored. One exception is Pan and Christiaensen (2012) who demonstrate the potential for elite capture in decentralized distribution systems to limit the efficiency of targeting. However, no study we are aware of till now has looked at the role of such social capital on the experience of farmers who participate in an otherwise identical targeted voucher program; with the exception of how farm groups were used for product distribution. Understanding when group characteristics can be leveraged as well as potentially problematic mechanisms from their use can increase the efficiency of targeted input programs in reaching their intended beneficiaries.

The 2009 fertilizer voucher program in Kano and Taraba

Studies have shown that policy inconsistency, late access to fertilizer; high prices and poor fertilizer quality are major constraints to fertilizer use in Nigeria (Banful and Olayide, 2010; Liverpool-Tasie et al., 2010). Consequently, the use of vouchers has been proffered as a potential solution to the shortcomings of subsidized fertilizer largely distributed by the government¹ (IFDC, 2010). In 2009, a fertilizer voucher program was piloted in two Nigerian states; Taraba and Kano. The voucher program was a collaborative effort between the Nigerian government (Federal and State), the private sector suppliers and dealers and an implementing agency called “The International Center for soil fertility and development” (IFDC). Contrary to past National subsidy programs largely driven by the government, the voucher program (though supported by the government) was implemented under the direct supervision of a development agency (IFDC) and through the private sector.

The two pilot states chosen for the 2009 program were Taraba and Kano. Taraba state with a population of about 2.3 million is located in North Eastern Nigeria (See Fig. 1). Majority of the state's population is engaged in farming and grows cassava (manioc), sorghum, millet, rice, yams, sugarcane, and corn (maize). Other important economic activities in the state include river fishing and the herding of cattle, goats, and sheep (Encyclopedia Britannica, 2012). Kano state on the other hand is located in Northwestern Nigeria (see Fig. 1). It is the most populous Nigerian state, with about 9.4 million residents (National Population Commission, 2006). The primary activities in Kano are commerce and agriculture. The principal food crops cultivated in abundance are millet, cowpeas, sorghum, maize and rice for local consumption while groundnuts and cotton are produced for export and industrial purposes (Kano State, 2012).

The voucher program in both states was driven by a common motive to expand farmer access to fertilizer and to demonstrate a better way of distributing subsidized fertilizer in the country. The implementation of both programs was under the strict supervision of IFDC with very similar implementation procedures (IFDC, 2010). Though voucher distribution and redemption differed

¹ The traditional system of government procurement and distribution of subsidized fertilizer in Nigeria has been characterized as persistently delivering fertilizer late with the diversion of fertilizer from the intended beneficiaries (Nagy and Edun, 2002). Leakages of the product into the regular market were common, distorting the market price and providing arbitrage opportunities.

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