Effect of social capital on adoption of climate-smart agriculture in Nyando Basin, Kenya

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Key messages

- Climate-smart agriculture (CSA) practices have received widespread acceptance by social groupings and community-based organizations (CBOs) in Kenya’s Nyando Basin, but not all farmers have adopted these practices.
- Membership of farmer groups has seen a steady rise as evidenced in localized statistics.
- Membership of CBOs has a positive influence on the adoption of CSA technologies.

Overview of the CSA practices and social groupings

In the Nyando villages, the primary source of food and income is mixed farming. The dry spells in the area which are associated with changing weather patterns, have impacted negatively on families. CSA practices improve and shield people’s livelihoods from the adverse effects of climate change. Farmers in Nyando partner to form community groups that champion adoption of CSA practices. Through community groups and CBOs, farmers have embraced improved seed varieties and farm inputs. Challa (2013) indicates that 67% of the households engaged in innovative agricultural practices are actively involved in CBOs and self-help groups.

Findings indicate that 90% of the households were involved in diverse community groups across the Nyando Basin. In addition, 45% of the household heads were group members. Social engagements within a community build social capital and influence adoption of CSA practices as well as diffusion of new agricultural practices (Macloo et al. 2013). Munasib and Jordan (2011) define social capital as “a dense network of institutional and social connection that enhances political and economic efficiency.”

In Nyando, smallholder farmers are members of about 16 CBOs, and three of them are of particular interest to this study due to their close collaboration with CCAFS: KAPSOKALE, Agoro North East Communities (NECODEP) and Friends of Katuk Odeyo (FOKO). These CBOs advocate for adoption of CSA practices among rural households in Nyando. CCAFS has been instrumental in the introduction of improved breeds of Gala goats and Red Masai sheep, planting of fodder trees, water harvesting, greenhouse agriculture, and related activities such as beekeeping. These interventions have been channeled through the three CBOs and farmers in the
groups that form the CBOs have benefitted from these interventions. They have improved their farm production and built resilience to climate change (Kimeli et al. 2017). This study analyzes the extent to which small-scale farmers have adopted CSA by virtue of being members of CBOs and social groups.

**Analysis of the group membership**

There are diverse farmer groups in the Nyando Basin: 13% of farmers are members of Tuinuane Group; 9% are members of Obinju self-help group; 5% are members of Kobiero women’s group; and FOKO and KAPSOKALE CBOs form 61% of group membership.

Only 16% of the respondents were not engaged actively in any group. Most farmers that had adopted CSA practices obtained the information on CSA from their farmer groups.

Governmental and non-governmental organizations (NGOs) sensitize farmers on new agricultural practices through CBOs. The group members were largely women who accessed extension and credit services, thus resulting in higher yields in crop and livestock production (Kimeli et al. 2017). On the contrary, men own relatively large number of plots; have higher education levels; and equally reported higher yields in crop and livestock production (Kinyangi et al. 2017).

**Figure 1. Forms of groups among farmers in Nyando Basin, Kenya. Source: Author**

In Figure 1 above, mixed-gender groups were a majority and had a higher percentage of farmers than women-only groups. In addition, 14% of farmers were in adult men groups while 8% of farmers were in youth groups. According to the baseline data, only 3% of persons in the groups had a disability.

Figure 2 showcases groups in Nyando that have adopted CSA practices. A total of 54% of farmers in the FOKO community group have adopted CSA practices. This implies that the majority of FOKO farmers have knowledge of the essence of CSA practices adoption. On the other hand, 32% of KAPSOKALE community group farmers have adopted CSA practices. Additionally, 14% of NECODEP farmers have engaged in CSA adoption.

According to the results, only 9% of the households were not engaged actively in any community group. 90% of the households were involved in diverse community groups. It is noted from baseline data that 45% of the household heads were group members. The study findings indicate that 54% of household heads undertook crop farming as a primary occupation whereas 13% were engaged in salaried employment. This shows that group membership enhances CSA adoption compared to other occupations. Across Nyando Basin, according to Kinyangi et al. (2013), there has been a slight rise in enrollment to groups by 20%, 22% and 24% in FOKO, KAPSOKALE and NECODEP CBOs respectively.

The rising level of membership to farmer groups and CBOs is partially attributed to the existence of NGOs.
whose provision of training to farmers, donation of beehives, seeds and fertilizers have strengthened CBO attendance and adoption of new agricultural practices (Maccolo et al. 2013). It was established that farmer groups had more women than men as members; owned a relatively large number of plots; obtained higher levels of education; accessed extension and credit services; had larger families; and reported higher yields in crop and livestock production. Generally, the adoption of CSA practices in Nyando Basin is greatly attributed to the farmer groups because they offer critical training, extension services and support to farmers towards adopting CSA practices.

The majority of middle-aged persons are actively involved in groups and represented the majority in CBOs and social community groups. They also form a large percentage of members in CBOs and social community groups, suggesting that it is the middle aged that most adopt CSA. This is in contradiction to Roco et al. (2014) assertion that younger household heads adopt new technological farming practices the most in Central Chile. Nevertheless, in both instances, group membership greatly influenced the adoption new farming practices.

Besides group membership, education was also found to positively affect adoption of CSA practices. These findings affirm Pretty et al. (2004) that education has a significant effect since individuals are able to easily adopt high yielding crop varieties as demonstrated in the farmer group pieces of training. In addition, they effectively utilize extension services.

Conclusions and policy implications

The adoption of CSA practices through provision of training and extension services to individuals in farmer groups and CBOs should be an initial step towards sensitization of farmers to join groups, adopt CSA practices and secure funding from diverse agencies to boost their agricultural practices.

Development agencies in Nyando need to undertake a detailed audit of community-based organizations and all farmer group leadership, formation, operation, organization, dynamics and sources of new agricultural technolo-

gies disseminated to members. The CSA practices are critical in curbing adverse climate change impacts, as well as boosting farmers’ incomes. A crucial link between CSA adoption and non-adoption, besides non-governmental agencies such as CCAFS, is the community-based groups. Thus, the study indicates that membership to farmer groups has been on a steady rise. It concludes that membership to farmer groups has a positive influence on the adoption of CSA practices.

Further reading


The Brief summarizes findings of a project by the Amsterdam Center for World Food Studies (ACWFS), Wageningen Economic Research, University of Nairobi’s School of Economics and in collaboration with the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). The project aimed at identifying viable strategies for scaling out CSA technologies. The brief focused on effects of social capital on the adoption of CSA practices among households in Kenya’s Nyando Basin.

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