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**Impact of Farmer Fields Schools on empowerment and agricultural outcomes in Zanzibar**

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**Objectives/aims**

Previous studies have generally shown that participation in Farmer Fields Schools, FFSs, can contribute to an increase in farmers knowledge and adoption of improved practice, increase in agricultural productivity and income, relative to non-FFS participants. However, most of these studies had moderate to high risk of bias and the internal validity of their estimates are highly questionable (Waddington et al., 2014). Given the lack of rigorous evidence on the effectiveness of FFS interventions on their participants, the findings of this impact assessment will have important policy implications. The objective of this study is therefore to assess the impact of the Agricultural Sector Development Programme-Livestock (ASDP-L) and Agricultural Service Support Programme (ASSP), two IFAD-supported projects that developed the agricultural production systems and empowered livestock keepers and farmers in Zanzibar, through the provision of capacity building and training activities in the form of FFS. The major outcomes of this study are gender empowerment, agricultural and well-being outcomes.

**Methods**

The impact assessment of ASDP-L and ASSP is largely based on a quantitative household survey conducted in 2018. The cross-sectional quantitative survey collected data from 2064 beneficiary an control households sampled using a quasi-experimental design. To inform the design and interpretation of the quantitative data, the impact assessment also drew information from a qualitative study conducted by the project staff as part of the project completion process, i.e. the Participatory Impact Assessment (PIA). The qualitative study was conducted for the purpose of understanding the impact of the programme at household, group and community level, with a particular focus on farmers empowerment.

To identify the counterfactual group, this impact assessment relied on an experimental approach that mimicked a phased-in selection design (pipeline approach). Strictly following the phased-in selection design was not possible given that the project implementation was already completed, all batches of the FFS had been established and all FFS participants received training. In a phased-in selection design, eligible beneficiaries selected to participate in the project, but scheduled to receive the intervention in the later stages, are chosen as the control group to avoid selection bias. The assumption is that since both the beneficiary and control group have been selected to receive the project intervention, there should in theory be no selection bias. Closely following this approach, the identification of eligible beneficiaries as the counterfactual group was done in the form of a quasi-experiment whereby project district officers (PDO) provided a list of 100 potential FFS participants by shehia, mirroring the targeting of a hypothetical future batch of ASDP-L and ASSP FFS participants. To ensure that there are no systematic differences between the potential lists of the hypothetical batch of ASDP-L and ASSP FFS participants and the beneficiaries, the same PDOs that implemented the project were used and the PDOs were instructed to use the same selection/targeting criteria as in the previous phases. The PDOs were also instructed to target farmers outside of the locality of the FFS and are not spillover farmers to avoid the contamination of the counterfactual. Using the list of the 100 potential FFS participants as the sampling frame for the counterfactual group, the same number of female and male potential FFS participants as the beneficiary farmers were randomly selected from each sampled shehia in the second stage. The final data collection covered 2064 households (1032 beneficiary and 1032 control households) from 516 FFS in 122 shehias.

**Main findings**

The expected outcome from the FFSs is the adoption of acquired knowledge in improved practices and marketing by the beneficiary farmers. The acquired knowledge through FFS participation should be diffused largely into the local community in the form of farmer-to farmer knowledge sharing with neighbours or friends, who are referred to as FFS spillovers. As the improved practices get adopted by the FFS participants and disseminate to spillover farmers, these can contribute to an increase in crop and livestock productivity and hence an increase in agricultural income for farmers in Tanzania (IFPRI, 2010). Interwoven in the increase in productivity and agricultural income, are also the benefits of resilience to economic and climate-related shocks.

Another outcome from the formation of FFS groups, which would have a positive impact on the well-being of the participants, is the farmers' investments in group packaging, processing, and marketing activities (Waddington et al., 2014). A greater access to market has been shown to increase agricultural productivity, firstly by facilitating specialisation and increase in the agricultural produce sold in markets, and secondly through intensification of input use (Kamara, 2004).

Empowerment of the participatory farmers is another planned impact of the ASDP-L and ASSP FFS interventions. By accessing the FFS curricula and gaining new knowledge, farmers may moreover feel empowered and capable of taking on a greater role in the community to pursue their interests. It is usually argued as the most significant impact of FFS participation, as it tends to build the capacity of the local farmer groups and strengthening their resolve to make well informed choices or decisions, which can ultimately lead to increased uptake of innovations in agricultural practices, access to services and market access (Friis-Hansen and Duveskog, 2012). In rural communities, FFS programs are somewhat seen as a venture point for vulnerable farmers to create their own cohesive economic empowerment groups, capable of venturing into collective and commercially-oriented activities (Gwary et al., 2015). Thus, empowering rural farmers allow them to boldly start new commercial ventures, outside their usual agricultural practice. 62% of the FFS participants were women; also, female participants assumed 65% of FFS leadership positions. Similarly through FFS participation, the socio-economic empowerment of rural women, in the form of intra-family decision making process, household contribution and increased income, can be improved (Fakhi and Sikira, 2018). Consequently, the ASDP-L and ASSP FFS interventions are expected to have substantially propelled empowerment of the rural farmers and especially women.

The final expected impact of the ASDP-L and ASSP FFS interventions is improved food security. Owing to increased productivity as a direct result of adopting the knowledge of improved agricultural practices, obtained from participating in the FFSs, households are less likely to experience hunger in the lean period and more likely to have better and nutritious meals for their children. What is then expected is that, techniques learned from participating in the ASDP-L and ASSP FFSs will be sufficient for the participatory farmers to be able to manage production yields and agricultural cycles, and thus stem food insecurity.

In terms of unintended consequences, this may materialize if District Farmers Fora – DFF (entities that should lobby for FFS participants interests) are ineffective or unable to represent farmers adequately. For instance, DFF may be biased and have preferential channels towards certain groups, or towards only those who can repay their services. In addition, conditional on the scale of adoption of improved agricultural practices promoted by the FFSs, the latter may have an impact on the local agricultural supply. By selling at a lower price, FFS participants may end up benefiting net consumers, but harming net producers particularly those who did not attend the FFSs and did not adopt improved practices and did not experience a growth in production. Lastly, a crucial unintended impact is one where FFS may have led farmers to diversify their livelihoods so much so to lead progressively farmers to move out of agriculture. Through the empowerment channel – FFS participants might initiate more profitable off-farm activities able to generate the highest share of their income gain.

Therefore this study will assess all these intended and unintended impacts and provide results on such outcomes.