



BURKINA FASO

MCC Learning from

MCC Burkina Faso—Agriculture Development Project Final Evaluation Report

Mathematica, February 2021

MCC has identified the following programmatic and evaluation lessons based on the MCC Burkina Faso Agriculture Development Project, Final Evaluation Report.

PROGRAMMATIC LESSONS

- **Large-scale irrigation projects for smallholder farmers may have difficulty meeting the ERR 10% hurdle rate since the costs per hectare are quite high.** In this project, the cost per hectare was \$55,000 meaning that each hectare would need to have implausibly high returns to meet the 10% hurdle. The evaluation found that this would have required higher levels of switching to more profitable crops such as tomatoes and onions. Furthermore, there are ceilings to the magnitudes of benefits making it difficult to reach a 10% hurdle rate. Despite the evaluation findings that profits for farmers increased significantly, the ERR for the project was negative. MCC is addressing this lesson in new compacts by focusing on smaller scale irrigation and farmer education for higher value agriculture early in the project.
- **MCC should engage in institutional reform and capacity development efforts earlier and more substantially.** To improve long-term sustainability, MCC should also find opportunities to build on existing institutions when creating water user associations (WUAs). The evaluation found that the complexity of organizational roles and relationships hindered the success of the project. In this case, the WUAs and the regional authority (AMVS) roles were clear for the most part, but the few disagreements have damaged the relationship. Trust in institutions is important to project sustainability. MCC is addressing broader policy and institutional reform PIR issues in its projects by establishing a PIR working group to determine how to promote improved understanding of and engagement with institutions in MCC programs.
- **The long-term operations and maintenance of irrigated perimeters depend on payment enforcement and savings mechanisms.** Specifically, (1) WUAs need to be able to deny water access to farmers who fail to make water payments; and (2) fees should be proportional to farmers' capacity to pay. In this case, due diligence reports showed that rice farmers would be unable to pay the fees because of low returns from irrigation, which bore out in practice; and (3) there could be a need to help develop savings mechanisms. MCC is addressing this learning by exploring new

institutional structures that are beyond WUAs such as bringing in the private sector for management and training in Lesotho.

- **The characteristics of farmers influence their relative motivation to pay water user fees and to make long-term investments.** The evaluation found that migrants felt less inclined than Di perimeter residents to invest in the land. MCC should start these kinds of investments with an assessment of the community and then the project design should address the gaps that could undermine long term sustainability of the project, especially operations and maintenance (O&M). A thoughtful design adapted to farmer incentives and motivation, adopting social inclusion lens, could leverage existing social pressure to support O&M.
- **Irrigation and associated infrastructure design, implementation, and maintenance are key to improving access to water for irrigation and improved agricultural outcomes.** Maintenance over the medium and long term should be more addressed as part of design. Specifically, the evaluation found (1) that more durable materials were needed for access routes and drainage. Clogged drains lead to flooding, uneven circulation of water, and illegal syphoning of water. Flooded access routes make it difficult to access irrigation infrastructure; and (2) missing canal gates on rice plots prevent WUAs from cutting access to farmers who do not make payments.
- **Land rights awareness campaigns on land use and transfer rights are key to improving land use, especially in a case such as Burkina where land titles/certificates were a new mechanism under the recently passed Land Law.** In Burkina's Di Perimeter, those with an increased awareness on land rights, leased land at a higher rate. Other studies have pointed to the key role awareness of land rights and policies plays in land use behaviors. MCC should ensure attention is paid not only to administration of land rights but also that households understand their rights associated with any new land policies/regulations. The land administrators need to understand the new rules but so do households. Furthermore, there were varying types of land rights and documentation provided through the project depending on the type of beneficiary (PAP or lottery winner) and land parcel (group or individual). This was further complicated by varying sizes of parcels allocated and types of crops that could be grown on each. The multiple types of land rights and related regulations for each obfuscated delivery of a streamlined, clear message on land documentation and associated use and transfer rights provided. Although there are key reasons to provide differing types of land rights and parcels, MCC should consider whether a more streamlined system is possible.

EVALUATION LESSONS

- **The timing of the quantitative data collection in conjunction with the qualitative data collection should have been spaced out more so that the quantitative findings could have informed the questions in the qualitative data collection.** Because the timing of the qualitative data collection did not allow for analyzing the quantitative data first, the evaluation was not able to determine why farmers responded to the incentives in the Agricultural Development Project but not in other projects. MCC is addressing this lesson by spacing out the quantitative and qualitative data collection in the Moldova irrigation evaluation, and using the final report of the Senegal irrigation evaluation to dig deeper into the qualitative findings to understand why farmers change behavior.

- **Piloting innovative data collection approaches can augment analysis and generate lessons for future evaluations.** This evaluation piloted remote sensing techniques at endline to generate unbiased estimates of cropping intensity, crop types, and yields. The evaluation found large discrepancies on yields between difference data collection methods – surveys, crop cuts, and satellite imagery. This knowledge will help MCC to delve further into what is driving these differences in future evaluations. The pilot also generated lessons for future data collection related to GPS measurement accuracy, sampling of plots, and the limits of using linked cadaster-survey data. Finally, MCC has learned that the use of different estimate methods should not come at the expense of the evaluation’s overall narrative and key findings.
- **Lottery-based randomized control trials (RCT) are feasible and effective ways of rigorously measuring the impacts of large-scale irrigation infrastructure on agricultural outcomes, but have some limitations.** Significance and balance tests demonstrated that control and treatment groups were similar along observable characteristics. The process was transparent and exceeded the target for female winners. While the significant differences between control and treatment groups are unsurprising, the evaluation’s findings are an important contribution to the slim literature on the impact of irrigation in Sub-Saharan Africa. Furthermore, RCTs alone cannot be used to estimate the project’s economic rate of return, which requires more precise estimates of perimeter-level outcomes. This RCT also did not allow the separation of effects of the project’s different land and agriculture components of the project. Lastly, establishing the lottery takes time and requires considerable and early engagement among staff. MCC is using this learning by considering lottery approaches in other RCTs.
- **MCC should ensure that the evaluation team includes the appropriate sector expertise, including experts knowledgeable in the sector of the intervention and the benefit streams.** Although the evaluation team in Burkina had agricultural and statistical experience, their initial team lacked both land and geospatial experts leading to much hand-holding by MCC during survey instrument development and a lack of clear analysis on key land outcomes and theories of change. Having an expert in the sector who understands the nuances of the sector, as well as exposure periods and the causal chain around land tenure security and governance are key. After the interim evaluation failed to properly collect and analyze the land outcomes, MCC required the evaluator to bring on land and geospatial experts, which greatly improved the evaluation’s quality at the final evaluation on land outcomes.
- **Local data systems are essential to answering core evaluation questions.** In this case, the unavailability of data from the Compact-supported market information system prevented the evaluation from answering whether prices of key crops had changed since the perimeter’s construction. This would have important implications for the project’s estimated economic rate of return. MCC is addressing this type of issue through implementing data quality improvements early in programs.

This document references and builds upon MCC’s lessons from the interim evaluation report (September 2019), which are saved on the MCC Evaluation Catalog.