Mozambique - Cashew Subsidy Voucher Pilot Impact Evaluation 2021-2022

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Report generated on: April 27, 2026

Identification

SURVEY ID NUMBER
MOZ_2021-2022_CSVPIE_v01_M

TITLE
Cashew Subsidy Voucher Pilot Impact Evaluation 2021-2022

SUBTITLE
Baseline and Endline Survey Rounds

ABBREVIATION OR ACRONYM
CSVPIE 2021-2022

COUNTRY/ECONOMY

Name	Country code
Mozambique	MOZ

STUDY TYPE
1-2-3 Survey, phase 1 [hh/123-1]

SERIES INFORMATION
These are the Baseline end Endline rounds of the DIME Cashew Subsidy Voucher Pilot Impact Evaluation Survey in Mozambique.

ABSTRACT
Despite strong and sustained economic growth over the last two decades, poverty in Mozambique has remained high, particularly in rural areas (Baez and Elabed, 2020). National economic growth has been in primarily capital-intensive and import dependent sectors, while rural poverty has remained entrenched, particularly in the agricultural zones of the Northern and Central provinces (Baez et al., 2018). 67% of Mozambicans live in rural areas (INE, 2017) and over 80% of the population derives its livelihood primarily from agricultural activities (Cunguara and Hanlon, 2010). However, the agriculture sector accounts for less than 32% of GDP (Suit and Choudhary, 2015). Increasing agricultural productivity and dynamism therefore appears to be a prerequisite for more inclusive economic growth. Demand for cashew nuts has been booming globally since 2010, with global trade increasing by 133?tween 2010 and 2018 (UNCTAD, 2021). This provides an opportunity for Mozambique to capture a growing global market and improve existing jobs, as well as creating new jobs at all stages of the cashew value chain.

Cashew is an important crop for farmers in Mozambique, with 1.3 million households growing cashew, 150,000 households being involved in the post-harvest industry, and a total of 6.5 million people deriving their livelihoods in part from cashew (Costa and Delgado, 2019). Cashew farming is an important source of income, with cashew production generating 53.6% of total household income (DIME, 2022). The cashew industry in Mozambique is centered around the production and primary processing of Raw Cashew Nut (RCN). Nampula and Zambézia provinces are the two most important areas for cashew production and processing, with 63% of total production and virtually all active processing factories situated in these two provinces. Although the production of cashew increased to an estimated 130,000 tons in 2018, Mozambique’s production remains below its previous production peak of 216,000 tons in 1972, when Mozambique was the world’s leading cashew exporter (Grob and Maceda, nd).

Cashew production in Mozambique is characterized by low yields (3 kg/tree on average) and a low quality of RCN (the kernel out-turn ratio of cashew is 44-45) com pared to other African countries such as Tanzania (kernel out-turn ratio of 50) and Cote d’Ivoire (kernel out-turn ratio of 48). In 2015, only 19 out of 40 million cashew trees were considered to be at a productive age, with a further 1 million trees estimated to become unproductive each year (Grob and Maceda, nd). The low yield and quality can be attributed to the high age of trees, inadequate production and harvesting practices, and the insufficient use of pesticides to protect trees against pests and diseases (Costa and Delgado, 2019). The Mozambique Nuts Institute (IAM) is tasked by the Ministry of Agriculture and Rural Development (MADER) to significantly boost production in the sector. The Government of Mozambique has prioritized revitalization of the cashew sector, aiming to significantly increase RCN production and regain its former strong position in the world market. One of the main policy responses in the sector has been the promotion of orchard rejuvenation through seedling planting and pesticide sprayings (Costa and Delgado, 2019). The correct application of pesticides is estimated to have the potential to increase yields from around 3 kg per tree to 10-15 kg per tree (Grob and Maceda, nd).

KIND OF DATA
Sample survey data [ssd]

UNIT OF ANALYSIS
Household, Individual

Version

VERSION DESCRIPTION
v01: Edited, anonymous dataset for public distribution.

VERSION DATE
2023-02-01

Coverage

GEOGRAPHIC COVERAGE
Districts: Angoche and Mogovolas
Localities: Namaponda, Nanhupo Rio and Nametil

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
Florence Kondylis	Research Manager
Paul Christian	Senior Economist
John Loeser	Economist
Dahyeon Jeong	Economist
Astrid Zwager	Research Officer

Sampling

SAMPLING PROCEDURE
Eligible sprayers and farmers were selected based on the ConnectCaju database that was designed and maintained by IAM and TNS. This database was developed to better track the developments within the industry and evaluate policy targeting the sector. The database collects information on farmers and sprayers including demographic data, the size and location of a farmer's/sprayer's orchard, and how many trees farmers/sprayers have. Moreover, IAM audits all farmers and sprayers in the database to verify the information and geo-tag orchards. Based on this database, TNS invited eligible sprayers to participate in a meeting that introduced them to the pilot, its modalities, and its objectives. Sprayers and farmers were then asked whether they would be interested in participating in the pilot and checked for their eligibility. Eligible sprayers had to: 1) Be located in the localities selected for pilot implementation, 2) Have farmer clients in the area they operate that they can service, 3) Have previous farmer clients that own between 50 and 500 trees, 4) Express an interest participating in the pilot. Following the meetings, TNS and IAM prepared a list of 40 candidate sprayers to participate in the pilot which were randomized into Treatment and Control group. Out of these 40, 6 needed to be excluded from our sample before of the implementation of the study started due to the following reasons:
- 4 sprayers were dropped because they did not have any client farmers they work with;
- 1 sprayer could not participate in the pilot due to health reasons;
- 1 sprayer became a sprayer for one of the cooperatives and was not available for the pilot anymore.

While the randomization was done before these sprayers were identified as ineligible or decided to not participate in the pilot, this should not negatively affect the outcome of our randomization since 3 of these sprayers were assigned to the Control and the remaining 3 to the Treatment group. Moreover, we conducted balance checks on sprayer characteristics of

sprayers that participated in the pilot which show that both Treatment and Control groups are comparable across a large set of observable characteristics. As a result, the pilot was implemented using a sample of 34 eligible sprayers to participate in the pilot. In the three localities, 20 sprayers are located in Namaponda, 8 in Nametil, and 6 in Nanhupo Rio.
The 34 eligible sprayers were then asked to provide a list of farmers they provided spraying services to in 2020. These lists were then updated using monitoring data from TNS on the sprayers' new clients during the 2021 spraying season. The resulting farmer lists include a total 845 farmers across all three localities and consist of two distinct group:
• Previous farmer clients: Farmers that were listed by eligible sprayers prior to the pilot. Previous farmer clients had to fulfil the following eligibility criteria:
1) Live in the catchment area of eligible sprayers, 2) Have been clients of the eligible sprayer in 2020, 3) Have between 50 and 500 cashew trees. In total, 358 previous clients were identified to participate in the pilot.
• New client farmers: New client farmers that were listed during the spraying season 2021 and did not have to fulfil any eligibility criteria. This group includes both farmers that have not worked with a given sprayer in 2020 (30% of new clients) and farmers that have worked with a given sprayer in 2020 but were ineligible for the pilot vouchers (70% of new clients). In total, 487 new client farmers were identified during the spraying season. Including new clients in the evaluation provides further insights into sprayers' decisions to service clients depending on whether free inputs were available with or without vouchers.

RESPONSE RATE
While all sample sprayers were surveyed during both Baseline and Endline, only 688 out of 845 farmers were surveyed in both rounds which corresponds to an attrition rate of 18.6 %. Attrition rates among farmers from the initial sample to the endline survey is balanced across key observable characteristics both across treatment and control group farmers as well as previous and new client farmers. Observable characteristics include gender of farmers, age of farmers, educational attainment, households size, number of trees, and number of sprayings applied.

Data collection

DATES OF DATA COLLECTION

Start	End	Cycle
2021-11-09	2021-12-10	Baseline
2022-03-30	2022-04-30	Endline

DATA COLLECTION MODE
Computer Assisted Personal Interview [capi]

DATA COLLECTION NOTES
Data quality was assured through DIME's rigorous data quality protocols. Surveys were performed on tablet devices running SurveyCTO Collect data collection software. During the interview data consistency and quality is managed through a series of hard checks (e.g. all relevant questions must have an answer, age cannot be more than 120) and soft checks (e.g. enumerators receive a flag for unlikely but not impossible answers such reporting cashew yields larger than 15 KG per tree). The DIME team performed immediate daily quality checks
and inconsistencies are then sent back to the field teams for final verification. Each survey was recorded and randomly audited for each enumerator at several points throughout the data collection.

Questionnaires

QUESTIONNAIRES
Farmer and Sprayer Questionnaires (Baseline & Endline) - see documents attached

Access policy

CONTACTS

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CONFIDENTIALITY

CITATION REQUIREMENTS
Use of the dataset must be acknowledged using a citation which would include:
- the Identification of the Primary Investigator
- the title of the survey (including country, acronym and year of implementation)
- the survey reference number
- the source and date of download

Example:
Florence Kondylis (Research Manager), Paul Christian (Senior Economist), John Loeser (Economist), Dahyeon Jeong (Economist), Astrid Zwager (Research Officer). Mozambique - Cashew Subsidy Voucher Pilot Impact Evaluation 2021-2022, Baseline and Endline Survey Rounds (CSVPIE 2021-2022). Ref: MOZ_2021-2022_CSVPIE_v01_M. Downloaded from [uri] on [date].

ACCESS AUTHORITY

Name	Affiliation
Steven Glover	World Bank DIME

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Metadata production

DDI DOCUMENT ID
DDI_MOZ_2021-2022_CSVPIE_v01_M_WB

PRODUCERS

Name	Abbreviation	Affiliation	Role
Development Data Group	DECDG	World Bank	Documentation of the study

DATE OF METADATA PRODUCTION
2026-04-27

DDI DOCUMENT VERSION
Version 01 (2026-04-27)

Data Dictionary

Data file	Cases	Variables
tns_iam_farmer_bl_2 Baseline Farmer Survey dataset	729	1250
tns_iam_farmer_el_2 Endline Farmer Survey dataset	688	700
tns_iam_sprayer_bl_2 Baseline Sprayer Survey dataset	34	1863
tns_iam_sprayer_el_2 Endline Sprayer Survey dataset	34	707