

Armenia - Water to Market Farmer Training 2007-2011

Mathematica Policy Research, Inc.

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Overview

Identification

ID NUMBER

ARM_2007-2011_WMFT_v01_EN_M_v01_A_OCS

Overview

ABSTRACT

The Farming Practices Survey (FPS) was commissioned by MCC to evaluate the impact of Water-to-Market (WtM) activities, particularly farmer training, on rural farmers in Armenia. Fielded by a consortium of AREG, an Armenia-based NGO, and Jen Consult, the FPS is a longitudinal survey of farming households interviewed at three points in time. FPS1 was conducted in 2007, before farmer training began. A second round was conducted one year after training began. Data from the second round is not included in this package. FPS3, the final round, was conducted three years after training began. This public-use file includes de-identified data from respondents to FPS3 and FPS1.

Households were selected for FPS1 interviews based on their likelihood of participating in WtM training, as assessed by mayors using criteria provided by the survey team. This process was used so that the surveyed households would include a high proportion of WtM participants. Each round of the FPS asked each household about their cropping patterns, irrigation and agricultural practices, crop yields, agricultural revenues and costs, other household expenditures, household employment, and other sources of household income.

KIND OF DATA

Sample survey data [ssd]

UNITS OF ANALYSIS

Households

Scope

NOTES

Section A: Land and Livestock

Section B: Roster of Crops Grown During the Last Agricultural Season and Changes Therein

Section C: Water Use

Section D: Farming Expenditures

Section F: Agriculture Equipment

Section G: Consumption and Monetary Income of HH Members

Section H: Household Rooster

TOPICS

Topic	Vocabulary	URI
Water	FAO	
Agriculture & Rural Development	FAO	
Poverty	FAO	
Impact evaluation	FAO	

KEYWORDS

On-farm water management, High-value agriculture, Irrigation, Agriculture, Rural, Farm investment

Coverage

GEOGRAPHIC COVERAGE

Regional

UNIVERSE

The survey covered farming households in rural communities that were included in the evaluation sample for the Water-to-Market impact evaluation.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Mathematica Policy Research, Inc.	

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	Funded the study

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Adoption of metadata for FAM
Mathematica Policy Research, Inc.	MPR		Independent Evaluator & Survey Firm

DDI DOCUMENT VERSION

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DDI DOCUMENT ID

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Sampling

Sampling Procedure

The evaluation design for the WtM activities dictated the sampling frame and approach to the FPS. The target was to complete interviews with approximately 25 farmers in each of 189 village clusters that was selected to be in the evaluation of WtM training. Village clusters consist of up to 4 small, neighbouring villages, and the 189 selected village clusters cover 211 villages. The village clusters are indicated in the variable "clusteringcode_b".

The baseline survey did not randomly sample respondents from the village clusters. The field team identified respondents for the FPS by working with village mayors to identify farmers who were likely to participate in WtM training so that a high proportion of farmers who were interviewed would have participated in training. The criteria were designed to align with the characteristics of farmers participating in ACDI's training programs, most notably, being actively engaged in farming, having modest farm area, living in the community for several years, and being between 25 and 70 years old.

AREG updated the sample list with the assistance of village mayors and marz officials, either at the marz offices or in the village itself. AREG and mayors targeted the households of farmers who were actively engaged in farming and had lived in the community for several years. Ultimately, a total of 4,715 farming households were interviewed for FPS1 in relevant communities. These same households were targeted for FPS3.

Deviations from Sample Design

Three villages that were originally sampled for the FPS were not surveyed at final follow-up. Two villages that were surveyed at baseline were not surveyed at final follow-up because they were found to have almost no active farmers. A third village was not accessible for the baseline FPS due to heavy snow. The rest of the villages in these WUAs were surveyed at baseline and final follow-up according to the sample design.

For FPS3, MCA-Armenia also added the objective of surveying recipients of MCA credit. As a result, the FPS3 was administered to 33 new farmers who had not been interviewed in FPS1 and had received MCA credit.

Response Rate

A response rate of 75%.

Weighting

Nonresponse weights were constructed to account for households that responded to FPS1 and did not respond to FPS3. The variable "nonresp_wt" contains these weights and were computed in the following way:

1. The nonresponse weights were computed by first calculating the propensity of a household's nonresponse in the FPS3.
2. The second step in creating nonresponse weights was to use the predicted values from the response propensity models to create weighting cells. Within each research group (treatment and control), five weighting cells were created that were determined by the size of the predicted likelihood that the household responded to the survey. This resulted in a total of 10 (5 x 2) weighting cells. The same nonresponse weight was assigned within each of these 10 cells.
3. The third step was to create the nonresponse weight for each cell. The nonresponse weight was calculated by dividing the total number of households in each cell by the total number of households that responded to the survey in each cell. Finally, the weights were rescaled such that the sum of weights for the treatment group and the sum of weights for the control group each equal the original sample size of 4,715. Additional details of the calculations of nonresponse weights are provided in Appendix A of the Water-to-Market Evaluation report, which is provided as a resource document.

Questionnaires

No content available

Data Collection

Data Collection Dates

Start	End	Cycle
2007-11-15	2008-02-21	Round 1
2008-11-04	2009-02-07	Round 2
2010-12-09	2011-03-15	Round 3

Data Collection Mode

Face-to-face [f2f]

Data Processing

Data Editing

Data edit:

After interviewers completed each questionnaire, the interviewers reviewed the questionnaire entries and submitted them to the field coordinator for cross-editing. During data entry in SPSS, mistakes were corrected using visual and program control. In the analysis phase, subsequent edits were made to logically impute data where appropriate. The data was entered in SPSS format by 4 specialists. Each set of responses for a questionnaire was entered by 2 specialists independently to cross-check skips and prevent mechanical mistakes. The first thousand and final five thousand entries were reviewed by Mathematica and MCA-Armenia, who compared the data entries to the hardcopy questionnaires and provided feedback on the data entry process. These data were transmitted to Mathematica for analysis.

Data processing:

After receiving the data, Mathematica merged the FPS3 and FPS1 data. While analysing the data, Mathematica identified several inaccurate records of farming households. These farmers were identified systematically based on their reported amounts harvested and sold at baseline versus follow-up. First, Mathematica identified specific crop harvests and amounts sold where the farmer's report changed by over 200 tons from baseline to follow-up. This identified fourteen farmers with harvests and sale amounts for barley, grape, peach, sweet cherry, potato, red beet, haricot, and gramma. None of the 14 identified harvests and sale amounts were accompanied by large changes in crop land area or revenues. Mathematica concluded that these results were likely to be outliers and replaced the outlying number based on the information about land and crop revenues. For many of these 14 harvests, this consisted of treating a reported amount sold as the revenues for that crop. This is plausibly a data recording error in that the FPS3 records crop revenues next to crop harvest amounts. Seven additional records were similarly recoded because they implied implausible prices per unit sold.

A second approach was used to address outliers for which there was insufficient evidence to conclusively determine if the reported value was accurate. The approach was to systematically censor outcome and baseline measures of income, production, cultivated land area at the 98th percentile for each measure, or the 2nd-highest value for that measure if the 98th percentile was less than or equal to zero. This process also helps de-identify any individuals with especially large amounts of income, production, or land.

Data Appraisal

Estimates of Sampling Error

Impacts of the WtM training program were estimated within a regression framework that controlled for baseline measures. Standard errors for the impact estimates were clustered at the village cluster level using Huber-White style "sandwich" estimators. Standard errors for key impact estimates are provided in Appendix B of the Water-to-Market Evaluation report, which is provided as a resource document.

Other forms of Data Appraisal

The censored variables were used to construct nonresponse weights to adjust for differences in observed characteristics between households who did and did not respond to the FPS3. Nonresponse weights were calculated using the procedure described in Appendix A of the Water-to-Market Evaluation report. The code to construct these weights are located in the Stata program "1_armenia_construct.do". These materials are provided as external resources.