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**INCREASE IN HOUSEHOLD INCOME DUE TO PROJECT
INTERVENTIONS**



SEPTEMBER 2014

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

INTRODUCTION

The Feed the Future West/WINNER Project was implemented from June 2009 through May 2014. One of the key objectives of the project was to improve the livelihoods of the people living in its areas of intervention. At the beginning of the project, the areas of intervention included the Cul-de-Sac watershed and the Gonaïves/La Quinte watershed. Following the January 12th 2010 earthquake, two new areas of intervention were added: the Matheux (St Marc) corridor and the Mirebalais/Saut d'Eau region. After the project was adjusted to integrate the Feed the Future initiative in 2011, the areas of intervention were circumscribed to the Cul-de-Sac corridor and the Matheux (St Marc) corridor, with the Mirebalais/Saut d'Eau region for activities in the mango value chain.

In 2013, FtF West/WINNER conducted a household survey in the three remaining areas of intervention (Cul-de-Sac, Matheux, and Mirebalais/Saut d'Eau) to ascertain the evolution of rural household income. This report presents the increase in rural household income in the areas benefitting of Ftf West/WINNER interventions.

METHODOLOGY

In order to calculate the increase in income of rural households benefitting from the FtF West/WINNER project, we could not use a rigorous methodology. This is because the baseline studies that were conducted in 2009 and 2010 did not use random sampling or comprehensive survey methodologies. The objective at the start of the project is to have an idea of average or “typical” sources of income in rural households in the areas of intervention of the project. Therefore, what is being compared in this report is the evolution of average rural incomes in the three areas of intervention where the project was active for most of its lifetime (Cul-de-Sac, Matheux, and Mirebalais/Saut d'Eau). This gives us an idea of whether and how increases in agricultural productivity and other income generating activities impacted rural household incomes in a general way. Because we did not follow a cohort of specific rural families from the beginning to the end of the project, we cannot make more specific inferences. However, it is still useful to compare the average income data collected in 2009 and 2010 with the results of the household survey conducted in 2013.

Definitions

It is important to include definitions of rural households. According to the Feed the Future indicator handbook, the following definition is used for Indicator 4.5.2-13 (Number of rural households benefitting directly from USG interventions):

A household is a beneficiary if it contains at least one individual who is a beneficiary. An individual is a direct beneficiary of s/he comes into direct contact with the set of interventions (goods or services) provided by the activity. The intervention needs to be significant, meaning that if the individual is merely contacted or touched by an activity through brief attendance at a meeting or gathering, s/he should not be counted as a beneficiary. Individuals who receive training or benefit from activity-supported technical assistance or service provision are

considered direct beneficiaries, as are those who receive ration or another type of good (An indirect beneficiary, on the other hand, does not necessarily have direct contact with the activity but still benefits, such as the population who uses a new road constructed by the activity or the individuals who hear a radio message but don't receive any other training or counseling from the activity.)

The definition of "rural" should be the definition used by the respective national statistical service.

BASELINE STUDIES OF HOUSEHOLD INCOME

To assess the rural household incomes in the areas of intervention of the FtF West/WINNER project, we used several baseline studies that were conducted at different points in the project.

Cul de Sac watershed

For the Cul-de-Sac watershed, there were two baseline studies conducted in 2009 at the start of FtF West/WINNER. The first baseline study was conducted by Agro-consult for the Rivière Grise and La Quinte watersheds and the report was completed in October 2009¹. However, the study did not include the hillside areas of Petionville, which were the subject of a separate assessment completed in December 2009 by consultant Dieuvet Michel². From the Agroconsult study, the average income from agricultural activities generated by rural households in the Rivière Grise watershed was 43,178 gourdes. Average income is higher in the productive plains than in the hillside areas, with an average rural household income in the Cul-de-Sac plain of 62,232 gourdes as opposed to 43,327 gourdes in the piedmont areas and 23,977 gourdes in the hillside areas. Table 1 below summarizes the average rural household income in the Rivière Grise watershed.

Table 1. Average rural household income in the rivière Grise watershed (2009)

Sources of income	Hillsides	Piedmont	Plain	Entire watershed	%
Agriculture	23,338	32,791	58,948	38,359	89%
Livestock	91	7,177	2,267	3,178	7%
Agro-forestry	548	3,359	1,017	1,641	4%
Total	23,977	43,327	62,232	43,178	100%

¹ Etude des systems de production agricole et des associations paysannes dans les bassins versants de la rivière La Quinte et de la rivière Grise, Agroconsult – Haiti SA, October 2009

² Diagnostic des systèmes d'exploitation agricoles et des organisations locales dans trois sections communales de la Commune de Pétienville et formulation d'actions à entreprendre, Dieuvet Michel, December 2009

From the Petionville hillside study, the average farm income was estimated for the communal sections of 4ème Bellevue la Montagne, 6ème au Cadet, and 7ème Bellevue Chardonnière. Table 2 below summarizes the average household income in the Petionville hillside areas in 2009.

Table 2. Average rural household income in the Petionville hillsides (2009)

Sources of income	4ème Bellevue la Montagne	6ème au Cadet	7ème Bellevue Chardonnière	Average	%
Agriculture	8,104	7,457	5,294	6,952	32%
Livestock	15,849	9,789	18,250	14,629	68%
Total	23,953	17,246	23,544	21,581	100%

We calculated an average baseline rural household income for the Cul de Sac watershed based on the average household income in the rivière Grise watershed (80% weight) and the average household income in the Petionville hillside areas (20% weight). Thus, the average baseline household income for the Cul de Sac watershed is estimated to be 38,859 Gourdes (**\$959**) based on the following calculation:

Cul de Sac watershed rural household income = Rivière Grise watershed rural household income (43,178 Gourdes x 80%) + Petionville hillsides rural household income (21,581 x 20%) = 38,859 Gourdes.

Matheux watershed

The baseline average rural household income in the Matheux watershed was derived from a baseline study conducted in 2010 by consultant Jean Chesnel Jean³. The following average rural household incomes, presented in Table 3, were estimated for different agro-ecological zones of the Matheux watershed.

Table 3. Average rural household income in the Matheux watershed (2010)

Sources of income	Coastal areas	Irrigated plains	Piedmont	Hillsides	Weighted Average
Agricultural revenues	25,428	121,700	32,711	40,717	68,957
Non-agricultural revenues	4,447	13,513	28,842	32,748	23,159
Total	29,875	135,213	61,613	73,465	92,115

³ Haiti WINNER, Rapport ligne de base Cabaret/Montrouis, Jean Chesnel Jean, November 2010

In order to derive the average agricultural household income for the Matheux watershed, we used a weighting factor based on the percentage of farms in each agro-ecological zone (0.8% for coastal areas, 39.1% for irrigated plains, 27.5% for piedmont areas, and 25.4% for hillsides. Thus, the average agricultural household income in the Matheux watershed was estimated to be 68,957 Gourdes (**\$1,682**).

Mirebalais/Saut d'Eau region

The baseline average rural household income in the Mirebalais/Saut d'Eau region was derived from a baseline study conducted in 2010 by consultant Jean Chesnel Jean⁴. As for the Matheux, rural household income was estimated for the different agro-ecological zones of the Mirebalais/Saut d'Eau region, as shown in Table 4 below.

Table 4. Average rural household income in the Mirebalais/Saut d'Eau region (2010)

Sources of income	Dry plains	Irrigated plains	Piedmont	Hillsides	Weighted Average
Agricultural revenues	22,718	43,512	30,465	34,216	34,525
Non-agricultural revenues	18,539	22,006	28,842	28,756	22,764
Total	41,257	65,518	59,763	62,975	57,289

In order to derive the average agricultural household income for the Mirebalais/Saut d'Eau region, we used a weighting factor based on the percentage of farms in each agro-ecological zone (26.88% for dry plains, 41.2% for humid plains, 19.7% for piedmont areas, and 12.3% for hillsides. Thus, the average agricultural household income in the Mirebalais/Saut d'Eau region was estimated to be 34,525 Gourdes (**\$799**).

HOUSEHOLD SURVEY

In 2013, the FtF West/WINNER project conducted a household survey in its areas of intervention to assess rural household incomes for beneficiaries of the project.

Methodology

The household survey aimed to assess the impact of the project on household beneficiaries' livelihoods, and more specifically on their expenditures. It will allow us to measure changes over time on the livelihood conditions of targeted rural household and their incomes. Based on Living Standards Measurement Survey (LSMS)⁵ developed by World Bank, the household survey used

⁴ Haiti WINNER, Rapport ligne de base Mirebalais/Saut d'Eau, Jean Chesnel Jean, December 2010

⁵

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTLSMS/0..contentMDK:21610833~pagePK:64168427~piPK:64168435~theSitePK:3358997.00.html>

multi-topic questionnaires to assess many dimensions of household well-being, including consumption, income, savings, and employment. For a better understanding of households' welfare, LSMS emphasizes their consumption by including detailed questions on cash expenditures, value of crops for self-consumption, gifts, and a large range of other information.

Unit of analysis

The unit of analysis of this survey is the beneficiary household using the following definition: “*a household is a beneficiary if it contains at least one individual who is a beneficiary. An individual is a beneficiary if s/he is engaged with a project activity or s/he comes into direct contact with the set of interventions (goods or services) provided by the project. Individuals merely contacted or involved in an activity through brief attendance (non-recurring participation) does not count as a beneficiary*”.

For the control group, the unit of analysis is a non-beneficiary household, which is considered as a household that not meet the above definition.

Sampling

The household survey use a *probabilistic sampling method* to guarantee data statistical signification and sample representativeness. A *proportional sampling size method* based on the principle of spatial and population representativeness coupled with a *quota method* was used to choose the sample.

Hence, the number of beneficiary households and associations that were selected in each corridor was determined based on their quota of beneficiary households and association. The sampling frame of beneficiaries were registered members of the farmer associations. Thus the sample of beneficiaries was drawn from the 108,146 members registered from 272 associations taking part in the FtF West/WINNER project⁶.

The sample size of beneficiaries was calculated to guarantee a 97%-confidence level and a 5%-margin of error. From the given beneficiary population (108,146), the sample size to guarantee the aforementioned requirements should be of 469 (considering a finite population). This number was rounded to 500 to account for beneficiaries in the sample that could not be reached. A two-steps procedure was adopted to select the surveyed households. First, 54 associations from the project's areas of intervention (see the list in Annex 1) were chosen according to their size and types of support received from FtF West/WINNER in order to be representative of their respective corridor. Second, we randomly selected 500 members from these associations based on the number of members and of females to ensure representativeness. Table 5 presents a breakdown the households sampled by corridor.

⁶ Though we cannot assume that all members are living in different households.

Table 5. Households sampled by corridor

Corridor	# of associations	%	Targeted sample	# of members	%	# of female members	% female	Sample size	# of females
Cul de Sac									
Plain	124	45.6%	25	38,824	35.9%	20,143	18.6%	179	54
Hillsides	69	25.4*	14	44,111	40.8%	22,051	20.4%	203	61
CDS total	193	71.0%	39	82,935	76.7%	42,194	39.0%	382	115
Matheux	30	11%	6	16,264	15.0%	6,380	5.9%	75	23
Mirebalais/ Saut d'Eau	49	18%	10	8,947	8.3%	3,884	3.6%	43	12
Total	272	100%	55	108,146	100%	52,458	48.5%	500	150

Control Group

Since we did not conduct a baseline survey at the beginning of the project, we used a control group of non-WINNER beneficiaries in the zones of intervention in order to ascertain the differences in income between those who benefitted directly from project activities and those who did not benefit directly. The control group was chosen in the same ways as the beneficiaries sample (same socioeconomic and demographic characteristics) in order to be comparable.

Questionnaire design

As mentioned above, the questionnaire was designed based on the Living Standards Measurement Survey (LSMS) methodology developed by the World Bank. The questionnaire addressed household size and composition; agricultural production; rural income (including crops, livestock, and agro-forestry); other income generating activities; household expenditures (food, education, transportation, land rent, other); and access to credit. The questionnaire was administered to the 500 households selected in the sample and the results were tabulated and analyzed.

RESULTS OF THE HOUSEHOLD SURVEY

This section presents the results of the household survey. Table 5 shows the gender of the respondents by corridor; exhibit 1 presents the age of respondents by corridor; and table 6 shows the distribution of household size by corridor. The overall average household size is 5.91 individuals for beneficiary households and 5.21 individuals for non-beneficiary households.

Table 5. Gender of respondents by corridor

Gender	Cul-de-Sac		Matheux		Mirebalais / Saut d'Eau		Total	
	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries

Male	11%	16%	8%	24%	15%	14%	11%	17%
Female	89%	84%	92%	76%	85%	86%	89%	83%
Total	100%							

Table 6. Distribution of household size by corridor

Household size	Cul-de-Sac		Matheux		Mirebalais / Saut d'Eau		Total	
	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries
Min	1	1	1	1	1	1	1	1
Max	16	12	19	14	19	15	19	15
Mean	5.89	5.37	5.59	5.18	6.38	4.89	5.91	5.21

Few households reported having access to formal or informal credit, as shown in Table 7.

Table 7. Percent of households with access to credit

Type of credit	Cul-de-Sac		Matheux		Mirebalais / Saut d'Eau	
	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries	Beneficiaries	Non - beneficiaries
Money	17.5%	14.9%	14.8%	9.1%	33%	5.1%
Ag. inputs	16.7%	13.2%	9.6%	5.5%	34.9%	5.1%

The beneficiaries in the household survey were asked which FtF West/WINNER activities they benefitted the most from. Most respondents (55%) reported that they benefitted the most from the trainings they received and 37% acknowledged benefitting from more than one project activity. The other category includes activities such as agro-forestry and ravine treatment. Table 8 below presents the FtF West activities households benefitted from.

Table 8. FtF West/WINNER activities surveyed households benefitted from

FtF West/WINNER activities	% of households benefitting primarily from
Training	55.4%
Soil preparation	19.9%
Other	11.4%
Agricultural inputs	10.8%
Agricultural extension	2.4%
Total	100%

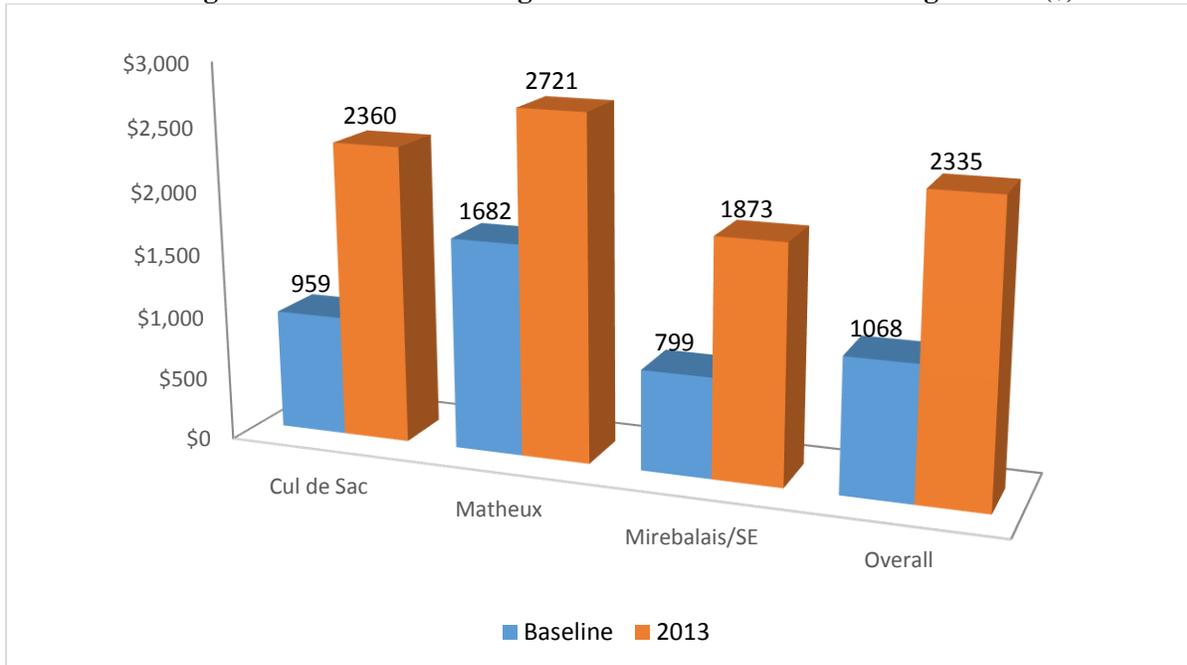
In 2013, the average household income of beneficiaries of the FtF West/WINNER program was \$2,360 in the Cul-de-Sac corridor, \$2,721 in the Matheux corridor, and \$1,873 in the Mirebalais/Saut d'Eau region. The average rural household income for all three zones of intervention was \$2,335.

INCREASE IN HOUSEHOLD INCOME OF BENEFICIARIES

A key result of the FtF West/WINNER program has been the increase in household income of farmers in the zones of intervention. From the baseline assessments conducted in 2009 and 2010, the average rural household income \$959 in the Cul de Sac corridor; \$1,682 in the Matheux corridor; and \$799 in the Mirebalais/Saut d'Eau region.

In 2013, FtF West/WINNER conducted a survey of rural households that received assistance from the project in the Cul-de-Sac and Matheux corridors, and in the Mirebalais/Saut d'Eau region. From this survey, the average household farm income in the project's areas of intervention was \$2,360 in the Cul-de-Sac corridor, \$2,721 in the Matheux corridor, and \$1,873 in Mirebalais/Saut d'Eau. Using a weighted average based on the number of farmer associations supported by the project in each area, we estimate that the average household income for FtF West/WINNER beneficiaries jumped from \$1,068 in the baseline to \$2,335 in 2013 (an increase of 119%). Figure 1 below illustrates the increase in household income.

Figure 1. Increase in average rural household income in target areas (\$)



Annex 1
List of famer associations surveyed (2013)

Locality	Farmer Association
Cul de Sac plain	
Ganthier	OFAVDBA
Croix des Bouquets	OPPC
Croix des Bouquets	ONKPP NEW-LIFE
Croix des Bouquets	APC
Ganthier	ODEB/C
Croix des Bouquets	CODESA
Croix des Bouquets	OJDH
Croix des Bouquets	BINV
Croix des Bouquets	ACPDD
Thomazeau	AJAD/O-Centre
Croix des Bouquets	MPC
Ganthier	MASOK
Thomazeau	APEAPACT
Thomazeau	OPEDEP
Thomazeau	OPDM/O
Belle Fontaine	VIMOPADB
Cornillon	OFADESC
Thomazeau	ORP
Croix des Bouquets	ORFEBD
Croix des Bouquets	MPDN
Thomazeau	ODGC
Ganthier	AVECG
Croix des Bouquets	REJADESH
Croix des Bouquets	MPDPC
Thomazeau	OPTDC
Ganthier	OPVM
Cul de Sac hillsides	
Kenscoff	OPARDN
Kenscoff	GRADCH
Kenscoff	COAGEL
Kenscoff	TANDE NOU TOU
Kenscoff	GPK
Kenscoff	AJJAC
Petionville	ADCM
Petionville	AJEDEM/P
Petionville	CACEFOBEM
Petionville	ACADMOZA
Petionville	APD
Petionville	SOKOBEL
Petionville	APBV
Belle Fontaine	UPRQB

Locality	Farmer Association
Matheux corridor	
Arcahaie	ODECAR
Arcahaie	SOCODEF
Cabaret	KOFAM
Arcahaie	JMA
Goyavier	MCDG
Cabaret	OFATA
Mirebalais / Saut d'Eau region	
Mirebalais	APZES
Mirebalais	AGROPRODUCTION
Mirebalais	KOPB
Mirebalais	MOFADEG
Mirebalais	MPSM
Saut d'Eau	RAPCOM
Saut d'Eau	MOPACMAS
Saut d'Eau	MOPADEM