FEED THE FUTURE WEST / WINNER

ROADS AND IRRIGATION SYSTEMS REHABILITATED BY THE PROJECT

MARCH 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.

CONTEXT

The Feed the Future West/WINNER project seeks to improve livelihoods and food security in its areas of intervention in Haiti through three intermediate results:

1. Agricultural productivity increased
2. Watershed Stability Improved
3. Agricultural markets strengthened

The improvement of critical rural infrastructures has been important in all three intermediate results. Under IR1 (agricultural productivity increased), the project worked to rehabilitate and improve irrigation networks; under IR2 (watershed stability improved), the project constructed water catchments to provide water to hillside farmers; and under IR3 (agricultural markets strengthened), the project worked to rehabilitate and assess rural roads.

This report provides a list and description of roads and irrigation systems rehabilitated by FtF West/WINNER

ROADS REHABILITATED

FTF West/WINNER rehabilitated two roads and conducted detailed studies for the rehabilitation of five additional roads.

Mahothiere – Bois Pini

FtF West/WINNER built a 5.5 kilometer rural road in the Commune of Kenscoff through a local community organization (MONAJEP). The road, which was completed in December 2009 allows 4,500 inhabitants of Belle Fontaine between Mahotiere and Bois Pini to have easier access to schools and health services, and to better bring their agricultural products to markets.

Williamson - Fonds Baptiste

On November 23rd 2011, the rehabilitated road between Williamson and Fonds Baptiste in the Matheux corridor was inaugurated. This 17.2 km road provides an important outlet for the agricultural products of the Fonds Baptiste area. The productive plains of Montrouis and Arcahaie can be protected by increasing sustainable agriculture in Fonds Baptiste.

Selection Process for other rural roads to be Rehabilitated in FtF West/WINNER areas of intervention

In addition to the Mahothiere and Fonds Baptiste roads that have been rehabilitated, FtF West/WINNER conducted detailed studies for the rehabilitation of five other roads. These roads were selected based on the following criteria:

- High level of interest from farmers and local authorities;
- Integration with other WINNER activities;
- Potential for adding value to target agricultural value chains;
- Potential impact on beneficiaries, especially small farmers;
- Economic justification of the road, based on a cost-benefit analysis.

Table 1 presents an overview of the roads considered for rehabilitation.

Table 1. Roads considered for rehabilitation

Corridor	Roads	Km	Reasons For Selection
Cul de Sac	Dumay	8.6	Key road in main agricultural area (5,000 ha of irrigated lands). Potential agricultural revenues: $18 million
Cul de Sac	Merceron	11.2	Road in a major rice and bean production area (2000 ha of irrigated lands). Potential agricultural revenues: $7 million.
Cul de Sac	Cottin	6.5	Road in a major bean and corn production area (1,500 ha of irrigated lands). Potential agricultural revenues: $5.4 million
Matheux	Bretelle-Cazale	12	Feeder road for key plantain and mango production and commercialization. Potential agricultural revenues: $5 million
Matheux	Robert - Delices	7	Feeder road for vegetable, mango and plantain production. Potential agricultural revenues : $3.5 million

Dumay Road

For the Nouailles to Dumay road, FtF West/WINNER conducted a significant number of studies including:

- A pre-feasibility study of the road
- A technical design of the road and bid documents
- An environmental assessment of the road
- A road traffic study
- A cost-benefit analysis of the road using a methodology provided by USAID

The map of the Nouailles to Dumay road is presented in Figure 1 below.

Figure 1. Map of the Nouailles – Dumay road to be rehabilitated

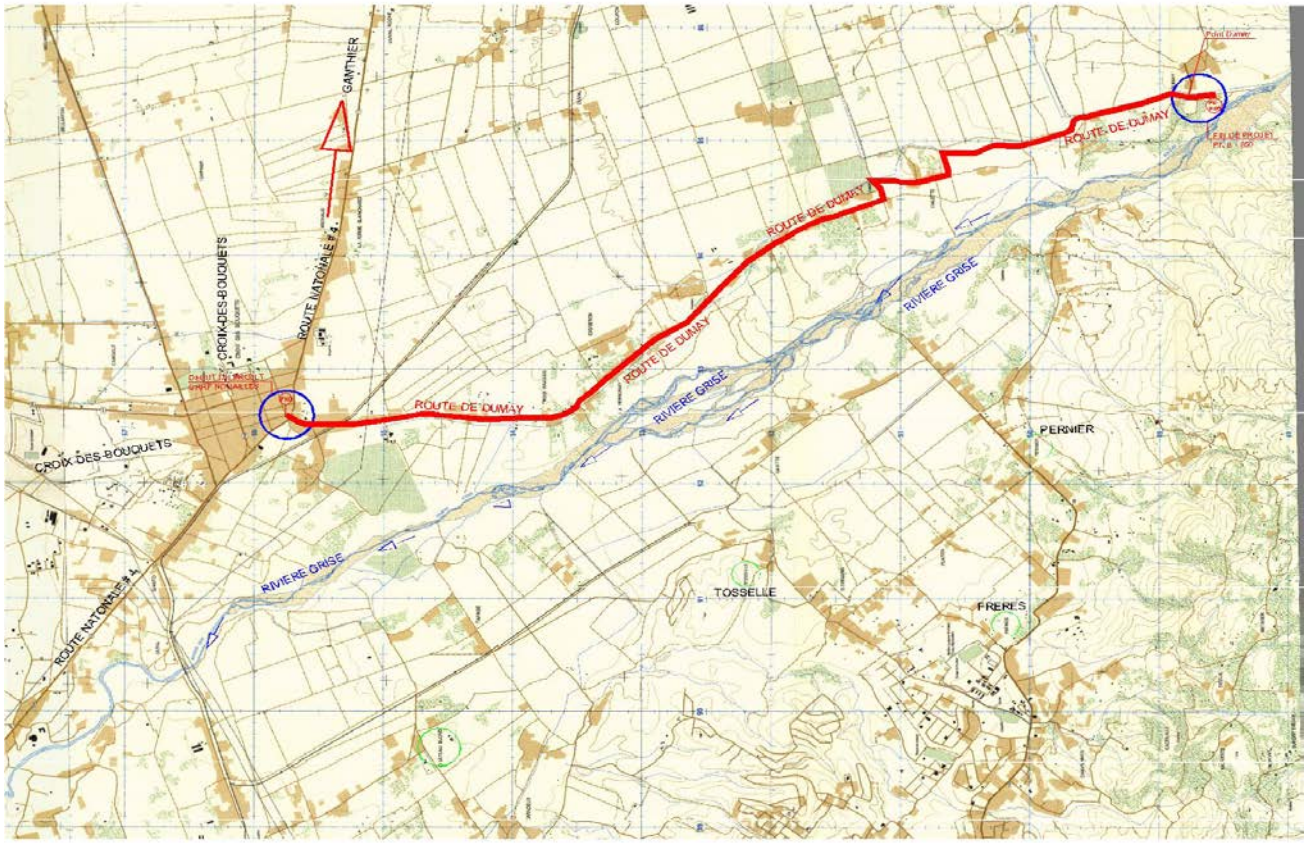


Figure 2 presents the roads identified for rehabilitation in the Cul deSac corridor and Figure 3 shows the roads identified for rehabilitation in the Matheux corridor.

Figure 2. Rural roads proposed for rehabilitation (Cul-de-Sac)

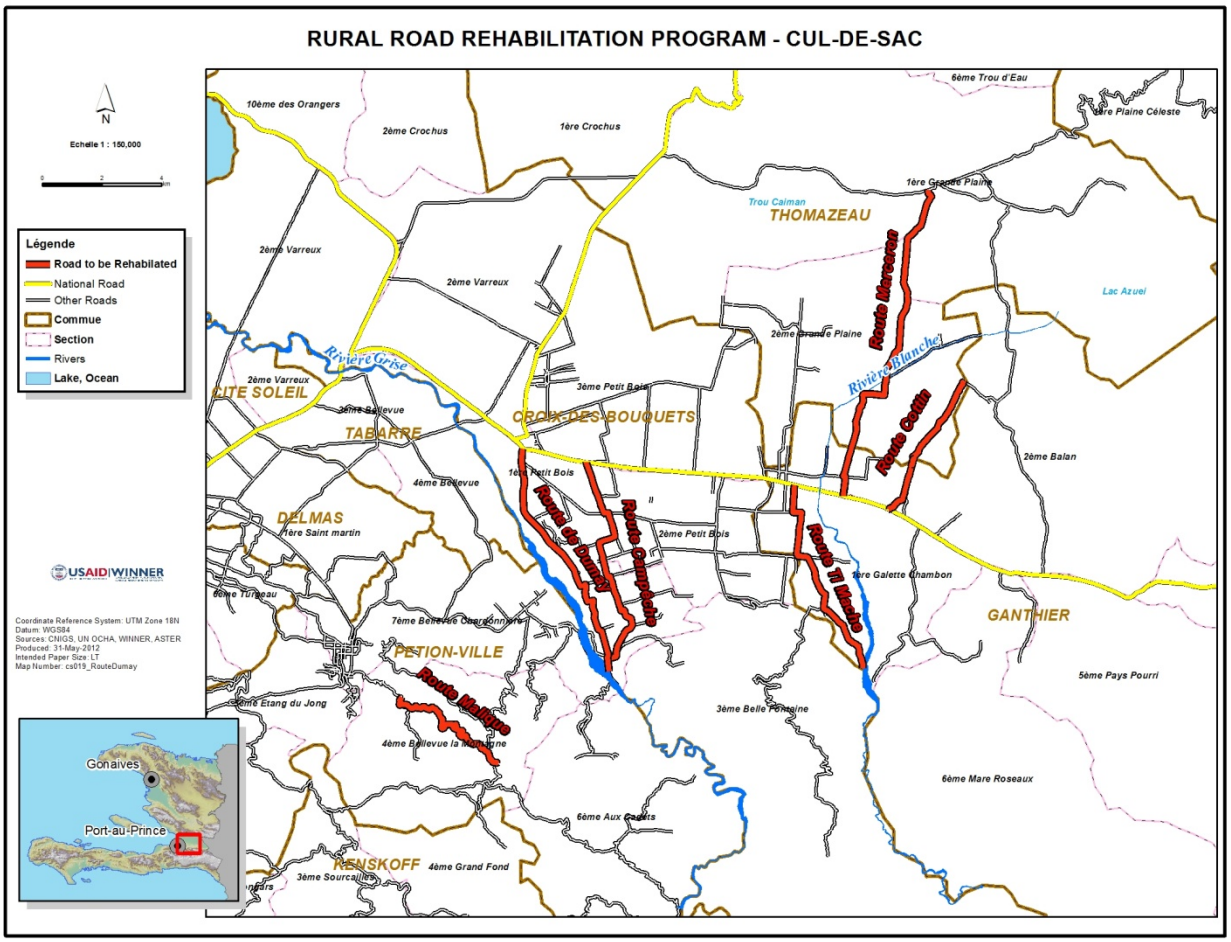
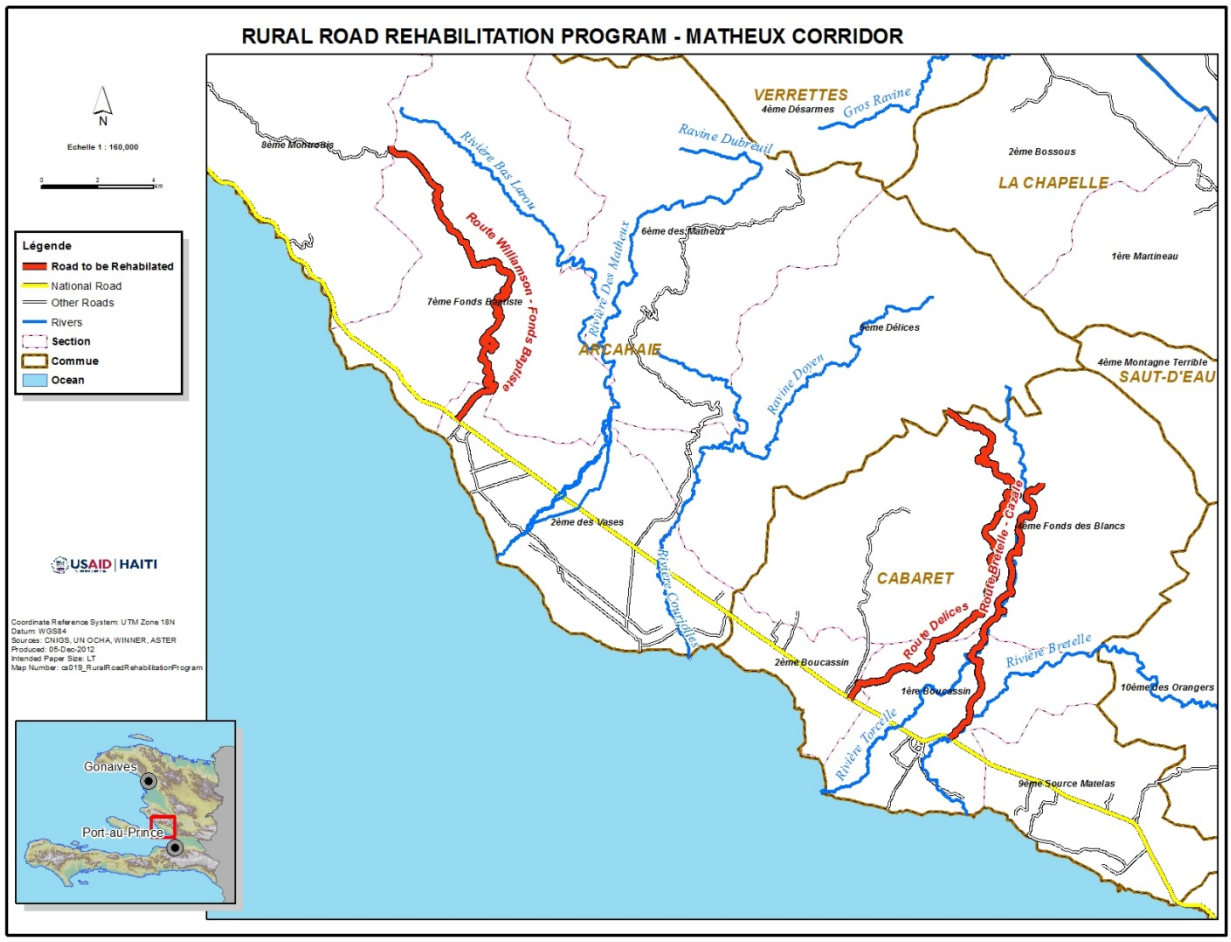


Figure 3. Rural roads proposed for rehabilitation (Matheux)



IRRIGATION SYSTEMS REHABILITATED

Access to irrigation water is key to increasing agricultural productivity. Since 2009, FtF West/WINNER has worked on the rehabilitation of irrigation systems in its areas of intervention.

Cul de Sac plain

In the Cul-de-Sac plain, a vast agricultural area with two main rivers (rivière Grise and rivière Blanche), the project found a very dysfunctional irrigation system with the intake from the rivière Grise not functional and many canals obstructed and overgrown with vegetation. As a result, many farmers had abandoned their fields who were quickly being converted for construction, and most farmers were only growing crops during the rainy season. The rehabilitation of irrigation canals in the Cul-de-Sac plain has had a very positive impact on agricultural development. Table 2 presents the irrigation rehabilitation works undertaken by FtF West/WINNER in the Cul-de-Sac plain from 2009 through 2013.

Table 2. Irrigation rehabilitation by FtF West/WINNER in the Cul de Sac plain

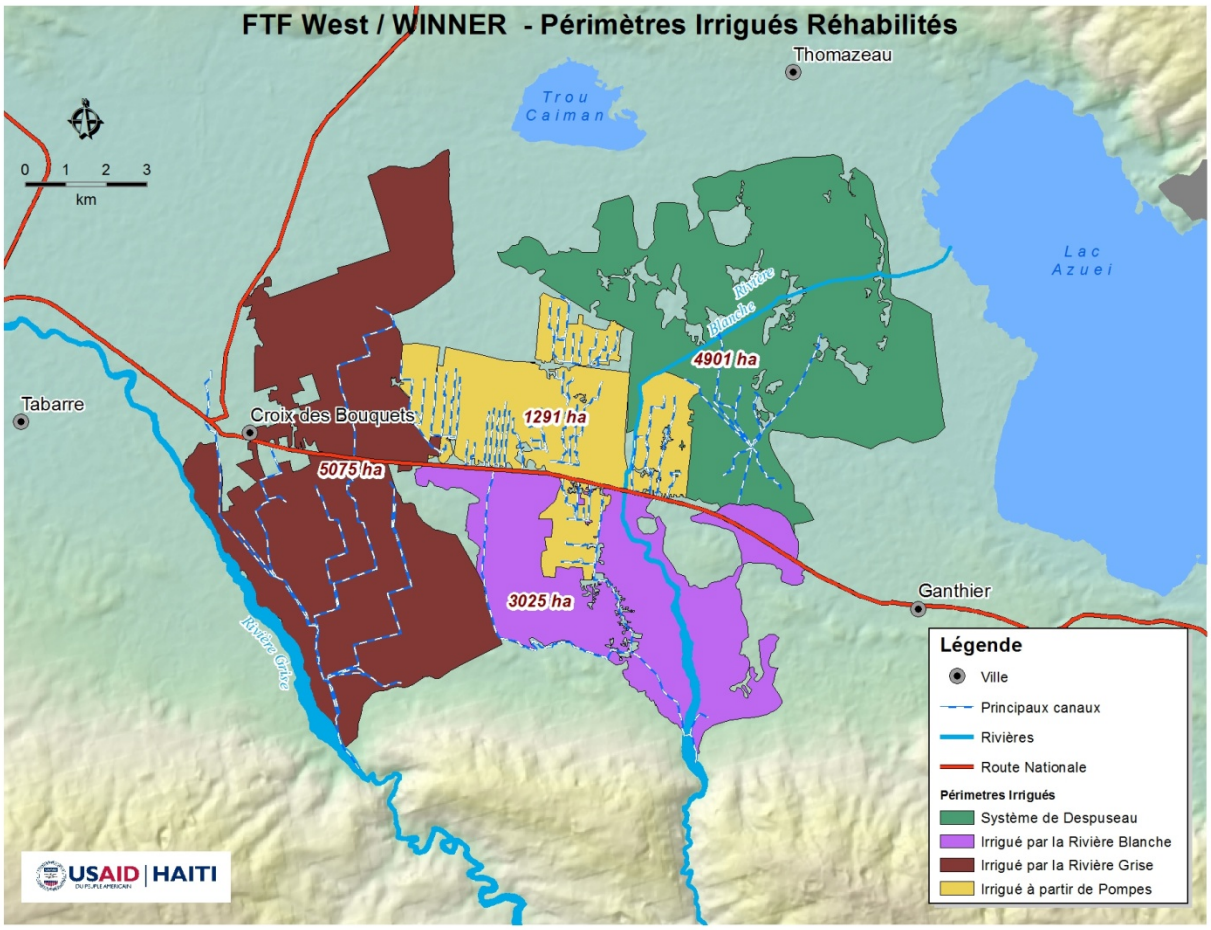
Irrigation perimeter	Area irrigated before FtF West/WINNER (hectares)	Area irrigated after FtF West/WINNER (hectares)	Total projected irrigated area	Type of work done
Rivière Grise	2,500	5,000	8,500 after the construction of the dam	• Rehabilitation of intake • Rehabilitation of irrigation canals
Rivière Blanche (left bank)	300	1,800 (before hurricane Sandy)	1,800	• Construction and curing of irrigation canals • Rehabilitation of irrigation canals
Rivière Blanche (right bank)	700	2,500 (before hurricane Sandy)	2,500	• Construction and curing of irrigation canals • Rehabilitation of irrigation canals
Source Zabeth	700	1,500	1,500	• Curing of irrigation canals
Cul-de-Sac Aquifer	700	1,450	1,450	• Rehabilitation of thermal power plant in Bas Boen • Rehabilitation of 15 irrigation pumps
Total	4,900	12,250	15,750	

It is worth noting that hurricane Sandy did considerable damage to the Rivière Blanche system by displacing the river bed and by eradicating much of the river banks. Nonetheless, the rehabilitation of irrigation networks by FtF West/WINNER has expanded farming opportunities in this irrigated perimeter.

With the irrigation rehabilitation works undertaken by Ftf West/WINNER to date, the area irrigated in the Cul-de-Sac plain has expanded from 4,900 hectares in 2009 to12,250 hectares in 2013. After the completion of the Rivière Grise diversion dam, a total of 15,750 hectares will be

irrigated in the Cul-de-Sac plain. Figure 4 presents the irrigated perimeters rehabilitated through FtF West/WINNER.

Figure 4. Irrigated perimeters rehabilitated by FtF West/WINNER in the Cul de Sac plain



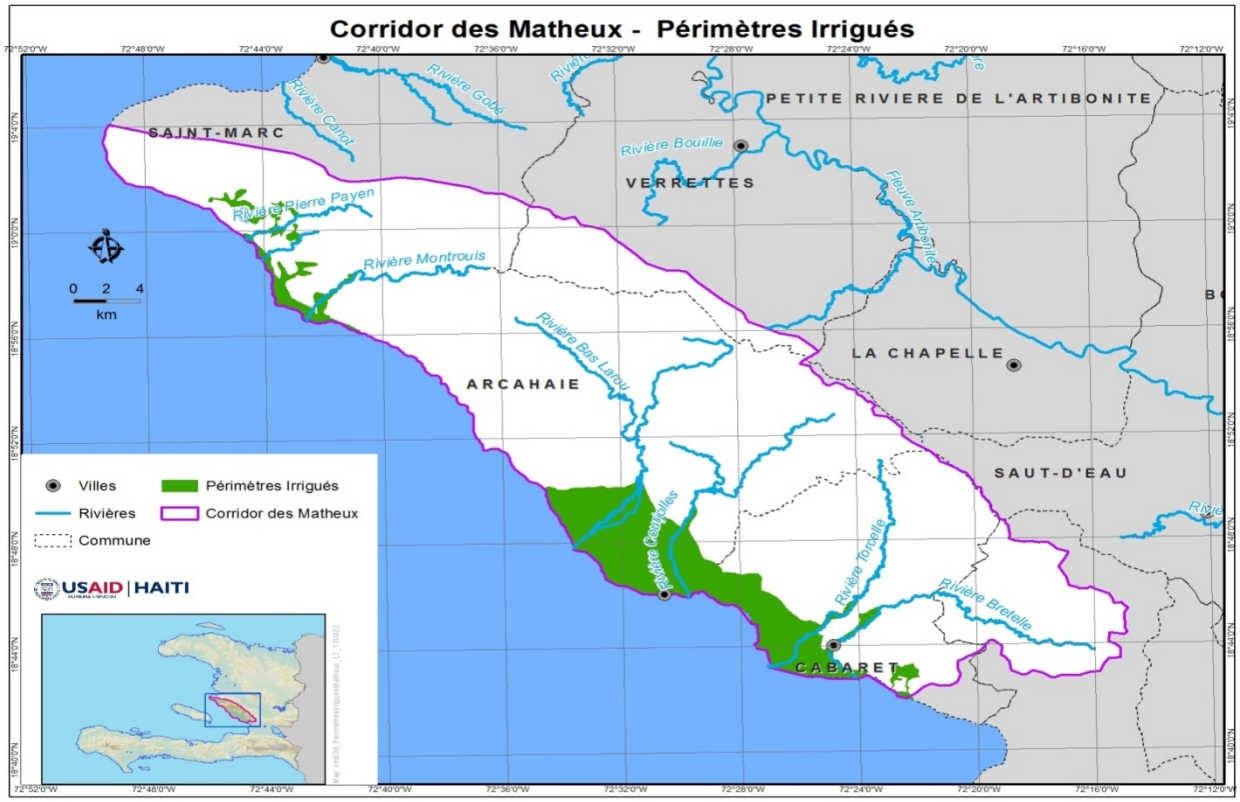
Matheux corridor

In the Matheux corridor, FtF West/WINNER worked on river bank stabilization, the rehabilitation of water intakes, and the rehabilitation of irrigation canals in order to reduce the risk of flooding and expand irrigation in this important region for plantain, beans, corn and vegetable crops. Table 3 provides a summary of the irrigation rehabilitation works undertaken by FtF West/WINNER in the Matheux corridor. Overall, the irrigated area in the perimeters where the project intervened increased by 67% from 3,850 hectares in 2010 to 6,445 hectares in 2013. Figure 5 shows the irrigated perimeters in the Matheux corridor.

Table 3. Irrigation rehabilitation by FtF West/WINNER in the Matheux corridor

Irrigation perimeter	Area irrigated before FtF West/WINNER (hectares)	Area irrigated after FtF West/WINNER (hectares)	Type of work done
Rivière Bretelle	600	1,300	• Repair of the water intake • Construction of Irrigation canals
Rivière Torcelle	1,500	2,600	• 6,000 m^3 of gabions • Rehabilitation of intake • Construction of 200 meters of canals • Cleaning of 4,000 meters of canals
Rivière Courjolle	1,000	1,500	• Construction and cleaning of irrigation canals
Montrouis irrigated perimeter	750	1,045	• Rehabilitation of intakes • Construction and cleaning of irrigation canals
Total	**3,850**	**6,445**	

Figure 5. Irrigated perimeters in the Matheux corridor



Other regions and projects

In addition to the Cul-de-Sac and Matheux corridors, FtF West/WINNER also worked on irrigation in Gonaives and in the Mirebalais/Saut d'Eau regions.

In Gonaives, the project rehabilitated the Dubedou irrigation system in 2009, putting back 500 hectares of land into productive use. FtF West/WINNER also rehabilitated pump #24 to irrigate the Tarasse perimeter.

In Mirebalais, the project constructed 749 meters of canals and rehabilitated a pump for the Wanny irrigation system, enabling the irrigation of 38.5 hectares.

After the January 12th earthquake , as part of the Accelerated Earthquake Recovery Program (AERP), the project cleaned 57 kilometers of irrigation canals in the Cul-de-Sac, Matheux and Gonaïves areas through a cash for work program that generated nearly 30,000 man days of labor.

WATER CATCHMENT BASINS BUILT AND REHABILITATED

In addition to the rehabilitation of irrigation systems in the productive plains, FtF West/WINNER also worked to expand irrigation in hillside areas by building water catchment basins. Overall, seven water catchment basins were built between 2010 and 2013 with an overall

storage capacity of 385,000 gallons. These basins are used for the production of hillside vegetable crops and to irrigate greenhouses. Table 4 provides a summary of the water catchment basins built by FtF West/WINNER.

Table 4. Water Catchment Basins built by FtF West/WINNER

Area	Locality	Basin storage capacity (gallons)
Cul de Sac (Kenscoff)	Platon Mat	56,000
Cul de Sac (Kenscoff)	Jacquet	56,000
Cul de Sac (Kenscoff)	Mahothière Bois Neuf	56,000
Cul de Sac (Kenscoff)	Comevette Despina	56,000
Matheux (St Marc)	Goyavier	52,000
Matheux (St Marc)	Lestable	29,000
Gonaives	Labranle	80,000
Total		**385,000**