# NRCS CONSERVATION INNOVATION GRANT

## **Final Report**

### August 2016

#### Grant Award Number 69-3A75-14-229

Grantee Entity Name: Alabama's Mountains, Rivers and Valleys RC&D Project Title: Rainwater Collection, Storage, and Use on Small Farms Agreement Number: 69-A75-14-229 Project Director: Jay Grantland Phone: 256 773 8495 Address: 5514 Hwy 31 S. Hartselle, Al 35640 Period Covered by Report: April 2015 to August 2016 A. Project Status 1. AMRVRC&D has designed and installed eighteen complete on farm rainwater collection systems across the 8 county project area of north Alabama. Here is a list of the completed systems: Rhonda Riley, 1301 Covenant Road NE Cullman, Al 35055. FSA Farm# 9665 Summer Mccreless, 1850 Co Rd 236 Town Creek, Al 35672 FSA Farm#1790 Lee McBride, 460 CR 1390 Falkville, Al 35622. FSA Farm# 3729 Marguerite McClintock, 220 Old Hwy 431 S. Owens Cross Roads, Al 35763 FSA Farm# 9180 Tune Farm, 85 Old Hwy 31 Falkville, Al 35622 FSA Farm#4390 Dwight Landsell, 14827 Main St. Town Creek, Al 35672 FSA Farm# 3748 Paul Stover, 549 Hammond Lane Toney, Al 35773 FSA Farm# 8730 J.D. Booker, 26290 Johnson Lane Toney, Al 35773 FSA Farm# 7767 Gavin Moy, 437 Chaffin Rd Horton, Al 35980 FSA Farm# 2489 Pic Roberson, 11255 Lucas Ferry Rd Athens, Al 35611 FSA Farm# 3150 Julie Wittschen, 1397 Charity Lane Hazel Green, Al. 35750 FSA Farm# 1688 Jimmy Osborne, 252 Red Oak Road Somerville, Al. 35670 FSA Farm# 3489 Stoney Beavers, 416 Swan Bridge Road Hayden, Al. 35079 FSA Farm# 7000

Jessie Murphy, 624 Kirby Bridge Road Danville, Al. 35619 FSA Farm# 4017 Charles Johnson, 2589 Co Rd 20 Trenton, Al. 35774 FSA Farm# 9909 Graham Farm, 420 Co Rd 27 Estill Fork, Al. 35745 FSA Farm# 2109 Mark Young, 1631 Pines Road Somerville, Al 35670 FSA Farm# 5458 Randy Kraft, 1130 Co Rd 1711 Holly Pond, Al. 35083 FSA Farm# 5755

# Twenty-two education programs on on-farm rain catch systems have been completed. These are as follows:

Jan 15th 2015 Town Creek, with SWCD. 31 people attended this education effort.

April 15<sup>th</sup> 2015 Dekalb County, AL. With SWCD. 10 people attended this education effort. May 15<sup>th</sup> 2015 Jackson County, Al. With AU Extension. 5 people attended this education effort. May 28<sup>th</sup> 2015 Lawrence County, Al. With Ag Center. 20 people attended this education effort. May 29<sup>th</sup> 2015 Cullman County, Al. Echota facility. 9 people attended this education effort. June 6<sup>th</sup> 2015 Cullman County, Al. Williams Farm. 22 people attended this education effort. June 9<sup>th</sup> 2015 Morgan County, Al. With AU Extension. 14 people attended this education effort. June 13<sup>th</sup> 2015 Limestone County, Al. Pic Roberson Farm. 19 people attended this education effort. June 25<sup>th</sup> 2015 Madison County, Al. With Al A&M Agribition. 23 people attended this education effort. June 27<sup>th</sup> 2015 Madison County, Al. Prevost Farm. 14 people attended this education effort. July 8<sup>th</sup> 2015 Cullman County, Al. Cullman Agriplex. 15 people attended this education effort. Oct 8<sup>th</sup> 2015 Cullman County, Al. Riverview Farm. 134 people attended this education effort. Oct 17<sup>th</sup> 2015 Morgan County, Al. Echota Tribe Center. 47 people attended this education effort. Oct 20<sup>th</sup> 2015 Madison County, Al. Alabama A&M University. 34 people attended this education effort. Feb 10<sup>th</sup> 2016 Morgan County, Al. Auburn Extension System. 48 people attended this education effort. Feb 11<sup>th</sup> 2016 Marshall County, Al. Auburn Extension System. 36 people attended this education effort. May 9<sup>th</sup> 2016 Lawrence County, Al. Al Co-op Extension System. 9 people attended this education effort. May 14<sup>th</sup> 2016 Madison County, Al. Al Co-op Extension System. 21 people attended this education effort. May 25<sup>th</sup> 2016 Madison County, Al, Madison Co. NRCS-SWCD. 18 people attended this education effort. June 1<sup>st</sup> 2016 Madison County, Al. Auburn Extension System. 19 people attended this education effort. June 18<sup>th</sup> 2016 Morgan County, Al. Alabama A&M University. 20 people attended this education effort. August 24<sup>th</sup> 2016 Morgan County, Al. Mark Young Farm. 11 people attended this education effort.

The **average** cost per unit (Rain Catch System) per farm is as follows:

Two Tank System

Tanks = \$1,480

Shipping = \$100

Guttering = \$320

Connectors and downspouts = \$52

Strapping, screws, screen = \$15

Tank delivery @ \$1.50/mile = \$150

Travel time @ \$50/hour = \$100

Installation @ 50/hour = \$150

Total = \$2,307

RC&D Cost (75%) = \$1730

Farmer Cost (25%0 = \$577

#### **One Tank System**

Tank = \$740

Shipping = \$50

Guttering = \$240

Connectors and downspouts = \$25

Strapping, screws, screen = \$7

Tank delivery @ \$1.50/mile = \$75

Travel time @ \$50/hour = \$50

Installation @ 50/hour = \$100

Total = \$1,287

RC&D Cost (75%) = \$965

Farmer Cost (25%0 = \$322

2. No problems or delays were noted.

- **3.** There were no cost overruns for this project.
- 4. No time extensions were needed for this project.

5. No changes to the projects objectives, methods or timeline were needed.

**6.** AMRVRC&D has learned that this project is easy to design and install on most all farm structures and can effectively capture and convey rainwater for use where needed in a small farm setting.

**7.** In the future AMRVRC&D will continue to monitor the rain catch systems to evaluate the effectiveness of this project.

#### **B. Project Results**

**1.** Preliminary results show that NRCS could use the alternative guttering designed by this project in other NRCS farm programs used to capture rain water.

2. No products, software tools or technologies have been developed by this project for transfer.

3. No new data or research needs have been identified in the implementation of this project.

**4.** All activities associated with this project are being documented and will be featured on the AMRVRC&D website.

#### **C. EQUIP Requirements**

1. EQUIP Eligible Producers

Rhonda Riley, 1301 Covenant Road NE Cullman, Al 35055. FSA Farm# 9665 Summer Mccreless, 1850 Co Rd 236 Town Creek, Al 35672 FSA Farm#1790 Lee McBride, 460 CR 1390 Falkville, Al 35622. FSA Farm# 3729 Marguerite McClintock, 220 Old Hwy 431 S. Owens Cross Roads, Al 35763 FSA Farm# 9180 Tune Farm, 85 Old Hwy 31 Falkville, Al 35622 FSA Farm#4390 Dwight Landsell, 14827 Main St. Town Creek, Al 35672 FSA Farm# 3748 Paul Stover, 549 Hammond Lane Toney, Al 35773 FSA Farm# 8730 J.D. Booker, 26290 Johnson Lane Toney, Al 35773 FSA Farm# 7767 Gavin Moy, 437 Chaffin Rd Horton, Al 35980 FSA Farm# 2489 Pic Roberson, 11255 Lucas Ferry Rd Athens, Al 35611 FSA Farm# 3150 Julie Wittschen, 1397 Charity Lane Hazel Green, Al. 35750 FSA Farm# 1688 Jimmy Osborne, 252 Red Oak Road Somerville, Al. 35670 FSA Farm#3489 Stoney Beavers, 416 Swan Bridge Road Hayden, Al. 35079 FSA Farm# 7000 Jessie Murphy, 624 Kirby Bridge Road Danville, Al. 35619 FSA Farm# 4017 Charles Johnson, 2589 Co Rd 20 Trenton, Al. 35774 FSA Farm# 9909 Graham Farm, 420 Co Rd 27 Estill Fork, Al. 35745 FSA Farm# 2109 Mark Young, 1631 Pines Road Somerville, Al 35670 FSA Farm# 5458 Randy Kraft, 1130 Co Rd 1711 Holly Pond, Al. 35083 FSA Farm# 5755

No project recipients have received any direct or indirect payments. All costs for each projects components and installation are incurred by AMRVRC&D. Each producer/recipient has provided adequate in-kind match for each rain catch system installed.

**2.** Each producer/recipient is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the farm bill. These compliance forms are on file.

#### **D. Final Budget**

Budget Item	Federal Share	AMRV- RC&D Share	Farmers Non-Financial Match
Personnel	\$5,740	\$8,380	
Fringe	\$1,033	\$1,620	
Installation			\$7,000 (\$438 per farm)
Travel	\$1,500	\$1,000	
Supplies Indirect	\$19,227 Budgeted \$16,931.59 Spent \$2,295.41 Under \$2,500	\$15,000	
Travel to NRCS Designated Events	\$-3,000 *No NRCS charges		
Budgeted	\$33,000	\$26,000	\$7,000
Expenditures	\$27,704.59	\$26,000	\$7,000
Balance	\$5295.41	\$0.00	\$0.00

\*No NRCS charges were incurred in the delivery of this grant project.

#### **Project Results**

This project has shown that low cost options are available for rain catch systems in rural small farm operations. These systems could easily be included in the NRCS Cost-Share Program for farmers needing alternative watering sources. Some of the key points for using these types of rain catch systems are as follows:

Low Cost

Low Tech...No Engineering

Addresses Water Quality

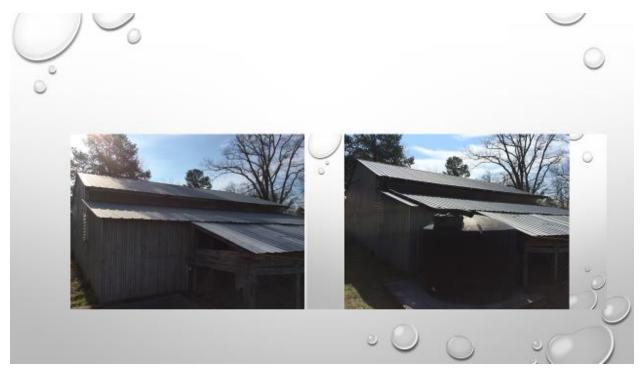
Addresses Water Quantity

Excellent for New and Beginning Small Farmers and Underserved

Farmers or any small contractor can easily install these systems

0	DESIGNING	0
Water Conservation Calculator	Size of Roof Collection Area 805 Square Feet Socies - sc & other under soci Gallons of Water 496 Gallons	
Set Size of Roof in top window. Read Gallons of Water Collected and Water Storage Capacity Needed to Maximize	Nater Storage Needed           Based on arresult rainful detween           45 and 55 inches and use of water           Average use of           Vear-roland collection, using	ww.aces.edu/waterwheels
Amount of Water Collected Based on Quantity of Water Used. ICA=Insufficient collection area	1.000 gallons per month year round 200 Gallons of Storage Capacity Needed	
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Each Farmer received a rainfall conversion calculator to monitor the amount of rain water available.



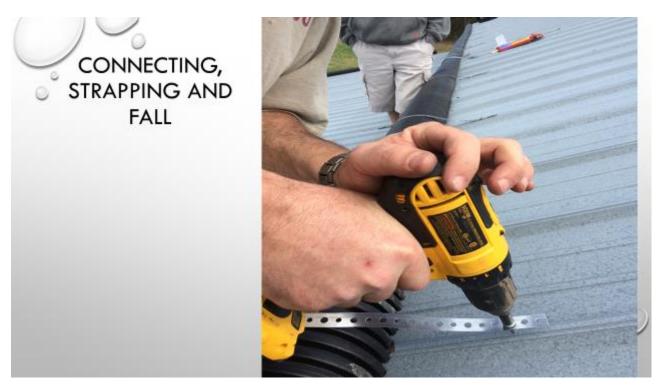
Before and after pics of installed system.



Farmers were responsible for preparing level pads for the tanks to sit on.



Double wall pipe was used for guttering as there is no fascia boards on barns to attach conventional guttering.



Standard metal strapping is used to attach the pipe guttering to the roofline.



A standard garden hose faucet is installed in the drain bung on each tank. Submersible pumps can also be used to convey the rain water.



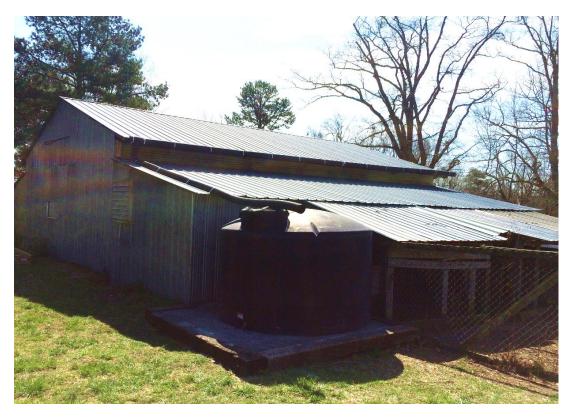
Graham Farm Rain Catch System, Estill Fork, Al. FSA Farm# 2109



Rhonda Riley Rain Catch System, Cullman, Al. FSA Farm# 9665



J.D. Booker Rain Catch System Toney, Al. FSA Farm# 7767



Lee McBride Rain Catch System. Falkville Al. Farm # 3729



Pic Roberson Rain Catch System. Athens Al. Farm # 3150



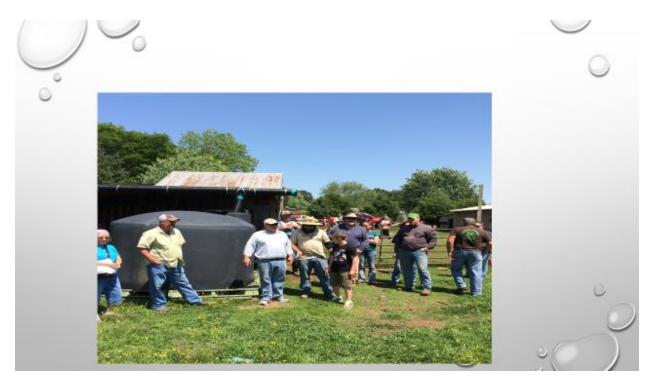
Marguerite McClintock Rain Catch System, Owens Cross Roads, Al 35763 FSA Farm# 9180



Gavin Moy Rain Catch System, Horton, Al 35980 FSA Farm# 2489



Charles Johnson Rain Catch System, Trenton, Al. 35774 FSA Farm# 9909



Rain Catch Education Field Day at the Pic Roberson Farm.



Rain Catch Education Field Day with Robert Spencer, Alabama A&M University.

Forms:					
Application					
5514 U.S. Highway Hartselle, Alabama 35640 256-773-8495 Mike.roden@amrvrcd.com Rainwater Collection System Application					
Name:					
County:					
Address:					
Best Phone Number					
Email Address					
Do You Have a Farm Number from USDA and are EQIP Eligible? YesNoDon't					
Know					
(Attach Documentation from USDA-FSAwhere you get your farm number)					
Size of the roof for the rainwater collection:					
Length & width Height from the ground to the roof					
Depth of the roof tin corrugations					
Does the building already have gutters YesNo					
Send pictures of the building(s) via email ( <u>jay.grantland@amrvrcd.com</u> or US Mail. Send					
picture of farm or map of the farm if possible.					
For what would you use the rainwater?					
Livestock: (enter number of animals)					
Goats					
Sheep Cattle					
Free Ranging Chickens					
Rabbits					
Other (list)					
Vegetables					
Organic or natural? YesNo					
Are you:					
<ol> <li>A new &amp; beginning farmer (farming less than 10 years)</li> </ol>					
<ol><li>American Indian (documentation not required)</li></ol>					
3) Military Veteran					
4) Limited Resource Farmer(Making less than \$23,500)					
5) Minority? YesNo					

#### **Cooperative Agreement**

#### **Small Farmers Rainwater Catchment Cooperative Agreement**

This Agreement is made and entered into on \_\_\_\_\_\_ by and between the Alabama's Mountains, Rivers and Valleys Resource Conservation and Development Councils, Inc. (hereinafter called the AMRV-RC&D), and \_\_\_\_\_\_ (hereinafter called the Farmer).

The Purpose of this agreement is to establish and demonstrate a rainwater collection system on a small farm.

The AMRV-RC&D & the Farmer deem it mutually advantageous to cooperate in this project, and hereby agree as follows.

#### 1. The AMRV-RC&D Agrees:

- A. To provide the site plan/ design and cost estimate for the project.
- B. To provide 75% of the cost as per the design and cost estimate as agreed to with the farmer ....including the water storage tank(s), selected guttering, filters, and required plumbing connections if needed and according to the plan.....
- C. To install the system with assistance of the farmer.
- D. To plan and deliver educational training for other farmers at the rainwater collection site when cleared and coordinated with the Farmer.
- E. To provide other assistance in planning and implementation as requested, needed, available, and agreed to by the AMRV-RC&D.

#### 2. The Farmer Agrees:

- A. To provide 25% cash or in kind match with proof of the time, materials or equipment used for the project as per the design to the AMRV-RC&D Council
- B. To provide a level pad for the placement of the tanks and assistance to install the system including the installation of gutters, conveyance pipe, tanks, and associated needs.
- C. <u>To seal, lock or otherwise secure the lid(s) to the tanks to avoid the possibility of small</u> <u>children or animals falling into the tank.</u>
- D. Not to set the tank(s) more than sixteen inches above ground level.
- E. To hold the AMRV-RC&D, employees and Board harmless in the event of an accident, injury or death associated with the installation and/or operation of the Rainwater Catchment System.
- F. To allow the AMRV-RC&D permission and to coordinate access to host field days to educate other farmers on the technique.
- G. To practice reasonable maintenance and operation of the Rainwater Catchment System for a minimum of two years. If the system is not being used due to the Farmer's changing of plans or the lack of reasonable maintenance within the two year period the AMRV-RC&D reserves the right to remove the equipment.
- A. Sign & document:
  - a. To return this signed COOPERATIVE AGREEMENT WITHIN 10 DAYS.

- b. Give credit to the AMRV-RC&D on press releases & publications.
- c. Call or contact Executive Director Mike Roden @256-773-8495 or email to mike.roden@amrvrcd.com with questions relative to this effort.
- B. Provide the AMRV-RC&D with a Federal Tax ID number\_\_\_\_\_.
- 3. It is mutually agreed:
  - A. This agreement shall become effective on the date appearing in the first paragraph.
  - B. This agreement may be revised upon mutual consent of both parties.
  - C. The Council may take appropriate action to ensure compliance with the terms of this agreement, which may include termination, suspension, or other remedies deemed necessary.

#### Signatures

#### Mike Roden AMRV-RC&D Executive Director

#### Farmer

Date

Date

By signing this agreement the recipient assures the Alabama's Mountains, Rivers and Valleys RC&D Council, Inc. that the program or activities provided for under this agreement will be conducted in compliance with all allocable Federal Civil Rights laws, rules, regulations, and policies.

<sup>&</sup>quot;All programs and assistance of the RC&D Council are available without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. RC&D is an equal opportunity provider and employer."

In-Kind Tracking Form

	NABAMA'S MOUNTAINS, RIVERS & VALLEYS							
		RC&D						
	ESOURCE CO	WSERVATION & DEVELOPMENT COUNCIL, INC.						
	Rainwater Collection							
	Farmer's In-Kind Match							
1)	Planning/ Design Assistance: _	# Hours@ \$20.50 per Hour						
-	-	Total Planning Costs						
2)	Pad Preparation:	Materials						
	-	Cross Ties or blocks						
	-	Gravel						
	-	Other						
	-	Tractor Timehr @per hr						
	-	Labor# hours x \$20.50						
	-							
	-							
	Total Pad Costs							
3)	Installation Assistance:	Materials						
	-	Equipment						
	-	LaborHrs @ \$20.50 per hr						
	-							
	-							
	-							
	Total Installation Costs							
<b>4</b> )	Field Day Planning	# Hours@ \$20.50 per Hour						
	Field Day program delivery	# Hours@ \$20.50 per Hour						
-		# Hours@ \$20.50 per Hour						
	-	# Hours@ \$20.50 per Hour						
	-	# Hours@ \$20.50 per Hour						
6)	Field day expenses							
	Total Field Day Costs	3						
	TOTAL IN-KIND CO	OSTS FOR THE SYSTEM						
		JOID FOR THE DIDIEN						

Farmer

Date

Date

# Rainwater Collection Job Sheet/ Invoice

Farmer Name:	
Location of Farm:	
Date Delivered or Installed	
Roundtrip Mileage from RC&D Office Beginning OdometerEnding Total Mileage@ \$1.50/mile	
Roundtrip Total Travel Time @ \$25/Hr /person x two	
Arrival Time @ FarmDeparture Time Total Installation Hours@ \$25/ Hour x two	
Number of TanksSize@ \$790 each*	
Number of feet/joints of Guttering@ \$80 per joint	
Number of Joint Connectors@ \$8 each	
Number of End or Down Spouts@ \$15 each	
Number of Reducers @ \$10 each	
Number of Flexible connectors@ \$6 each	
Other Strapping & screws \$5.00	
TOTAL COST RC&D 75% of the Total Costs Farmer 25% of the Total Cost	
Make checks to:AMRV-RC&DAMRV-RC&DSend to:5514 U.S. Hwy 31 So.Hartselle, Alabama 35640	