Arkansas Land and Community Development Corporation

Progress Report

Performance Period: November 14, 2016 – September 30, 2019

Report Type: Final Progress Report

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Title of Project: Project Title: Conservation Outreach and Assistance to Historically Underserved (COAHU)

Project Purpose: The purpose of this project was to increase the number of new EQIP applications for historically underserved producers and their awareness of new technology applicable for their operations. ALCDC worked one-on-one with project participants to assist them in preparing farm management plans for implementing best practices for resources conservation and long-term profitability. Training was provided for risk management in marketing, production, finance and human/legal resources risks which was incorporated in participants' whole management plans.

Project Status: The project finished successfully fulfilling goals, objectives and all contractual requirements. This report summarizes the activities of this project.

Outreach: ALCDC aggressively reached out to the targeted audience throughout our 42-county service area with the dedicated purpose of reaching farmers, ranchers and landowners and veterans to keep them: aware of NRCS conservation program services; how to benefit from these opportunities; and where to attend workshops, conferences and community meeting to understand the program details, including eligibility requirements. Additionally, these meetings allowed ALCDC, together with NRCS staff and our various collaborating organizations to

provide necessary training and technical assistance emphasizing conservation practices and best practices for sustainable agriculture.

The outreach activities included disseminating specific information relative to conservation and related NRCS program services through ALCDC's outreach program that included:

- ***E-Letters*** and over 2500 ***letters*** per year to our targeted population.
- ***Press releases*** advertising the ***ALCDC's Regional Conferences & Symposiums.***
- ***Radio Interviews and Ads***

Training Events: Bi-monthly workshops were conducted at training events including various symposiums and conferences throughout the 42-county service area. As a result of our aggressive outreach approach, the attendance at these training events ranged from 25 to as many as 40 historically underserved farmers, ranchers and veterans.

Two Annual Conferences per year served as very significant training events. At each conference, over 100 farmers/ranchers were afforded the opportunity of participating in workshops that addressed conservation practices, soil and nutrient management, financial resources and other topics of importance for increasing landowners profit potential. Various opportunities for local producers available through the USDA, NRCS program services and private sector resources were addressed.

A. Status Summary

Current problems or unusual developments or delays - None

Reasons why goals and objectives were not met, if relevant – All goals and objectives were met.

A description of any administrative changes during the previous six-month period – There were no administrative changes at any time during this project.

Explanation of any cost overruns, including no-cost extensions granted or changes to the scope or budget of the project – There were no cost overruns, cost extensions nor scope or budget changes for this project.

Lessons learned that inform future project activities - Attendance at training events are significantly larger when conducted in non-working hours/times.

B. Project Results

A summary of results to date and a comparison of actual accomplishments with proposed milestones and deliverables for the period.

Project actual accomplishments date exceeded expectations. Knowledge and awareness of benefits obtained by participants in our regional workshops and training events have spread throughout the service area in which should have a positive impact on future events.

Deliverables:

1. 50 new eligible EQIP producers per year implementing EQIP contracts.

ALCDC staff has assisted an average of 50 producers per year in becoming EQIP eligible and in various steps of implementing EQIP contracts during the performance of this project. They are listed later in this report.

2. 100 producers per year that are well trained in sustainable farming.

ALCDC staff assisted a yearly average of 112 producers in sustainable agriculture during the life of this project.

3. 50 farm plans per year.

ALCDC staff assisted a yearly average of 54 producers in preparing farm plans during the life of this project.

4. Semi-Annual progress report.

This report is the final progress report for this project. Five (5) semi-annual reports have already been submitted.

5. Supplemental narratives explaining and supporting payment requests.

Provided with payment requests.

6. Final project report.

This report is the final project report.

7. A new technology and innovative approach fact sheet.

A new technology and innovative approach fact sheet is provided at the end of this report.

8. Eligible producer participation in at least one approved NRCS event.

Deliverable met and reported on in a previous reporting period.

Any preliminary results that can be used by NRCS for practice standard revisions, new practice standard adoption, policy changes, program revisions and training opportunities. Products, software tools and/or technologies currently ready for adoption and/or transfer. Identification of any new data or research needs to inform broader efforts in the project's topic area. Links (or attachments) to communications products published/released since submission of the previous semi-annual report – None.

EQIP Producers

Provide a listing of EQIP-eligible producers involved in the project, identified by name only.

1. Dana Bradley Ministries,	2. Johnny Flenoy,	3. Jeffery Webb
4. Michael Stegal,	5. William Dickerson,	6. Leonard Thompson
7. Kevin Holmes	8. Curtis Floyd	9. James Stephenson
10. Curtis Tate	11. Elzadia Washington	12. Ezell Branch
13. Thomas Givan	14. Roosevelt Daniels	15. Bobby Holmes

16. Raymond Kelly
17, Troace Marshall
18. Andoval Williams
19. Angela Adams
20. Lawrence Conyers
21. Ester Doolittle II
22. Ester Doolittle
23. Ivory Neely
24. John Neely
25. Burthel Thomas
26. Curtistene Jackson
27, William Jackson
28. Light House Produce
29. Delores Robinson
30. David Clark Box Jr.
31. Albert Brady
32. Raymond Hansberry
33, David Adcock Jr
34. Tim Wilson
35. Frank Scott
36, Mike Parker
37. Lott Johnson
38. Ronald Scott
39. Rickey Powell
40. Carl Burnett
41. Floyd Jones
42. Christline Neal
43. Basil Joiner
44. Harvey Williams
45. Israel Gordon Sr.
46. Israel Gordon Jr.
47. Andre' Peer
48. Timothy Wilson
49. Damond Coffey
50. Raymond Kelly
51. James Lee
52. Danny & Stephanie Palmer
53. David Lee Shawn McKissick
54. Tony McKissick
55. Abraham Carpenter
56. Terrance Scott
57. George Humphrey
58. Herman Reeves
59. Smith Roger
60. Carl Burnett
61. Timothy Bean
62. Jason Evansingston
63. Nicky Evansingston
64. Dennis Smith Jr.
65. Scott McKissick
66. Shaun Danberry
67. James Hamilton
68. Jared Williamson
69. Clemell Edwards
70. Ralph Sigears
71. Miles Harshaw
72. Bobi Parker
73. Ronnie Pye
74. Adrian Farr
75. Thelma Bryant
76. Earnest Cox
77. Lorenzo Williams
78. Eddie Webb
79. Mack Cleveland
80. Pinky Neely
81. Joe N. Bryant III
82. Lewis Thrower
83. Andre' Williams
84. Gary Brewer
85. James Stephenson
86. J.C. Hall
87. Aresiono Jefferson
88. Dub Miller
89. Eddie Phillips
90. James Phillips
91. Billy Williams
92. Lonnie Wade
93. Timothy Bean
94. John Lee
95. Alvin Peer
96. Lonnie Wade
97. Billy Williams
98. Ken Fowler
99. Albert Carpenter
100. Stephan Walker
101. Daniel Perry
102. Cornelius Perry
103. Lonnie Blocker Sr.
104. Lonnie Blocker Jr.
105. Donald & Debra Bunche

106. Lisa Brewer	107. Jared Roper	108. Alfred Mohammed
109. Wallace Hollister	110. Leshon Randolph	111. Willie Mack Jones
112. Gwendolyn Stephenson	113. Jerry Boles	114. Joseph Hale
115. Berthena Nunn	116. Shane Foster	117. Scott Pipens (Brother)
118. Angela Adams	119. Sammie Ross	120. John Turner
121. Timothy Wilson Sr.	122. Jeff Edwards	123. Lolita Johnson
124. Kenny Rachel	125. Sherwin Holmes	126. Joe Bryant
127. Edward Thornton	128. Theo Eldridge Jr.	129. Sherman Nathan
130. Kwey Perry	131. George Hood	132. Vernon Williams
133. Larry Sacife	134. Stephan Hood	135. Foster Harshaw
136. Damon Coffey	137. Lawrence Lanos	138. Chris Beavers
139. Kyle Miller	140. Allen Levitch	141. Ben Anthony
142. Fredrick Pitchford	143. Donald Davis	144. Keianthony Cummins
145.Isaac Aldridge	146. Dwight O'Neal	147. Tyran Rice
148. Kenneth Harvey	149. Victor Zachary	150.Evelyn Shackleford
151. Timothy Williams	152. Arthur Hines	

Summation

Program activities have conducted and achieved in accordance with proposed program outcomes and goals. Such achievements has supported strengthening limited resource, minority and veterans farmers and ranchers economic sustainability through USDA conservation program services along with other partnership USDA agency support service.

New Technology and Innovative Approach Fact Sheets and Best Practices are presented in the remainder of this report.

New Technology and Innovative Approach Fact Sheet

This project responds to the conservation needs of Arkansas' limited resource, beginning, and socially disadvantaged farmers by providing accessible and culturally appropriate outreach, education and technical assistance to support the adoption of innovative and sustainable conservation practices. The financial and economic barriers often times present challenges to advancing farming operations consistent with technology. Yet new technology insertion into our clients' operations is a necessary for competitive survival.

Recently, there have been enormous advances in production agricultural, not only improving productivity, but just as importantly, safeguarding the environment. Several systems-research tools relating to information technology have become available for fertilizer management. With the introduction of geographic information systems (GIS), global positioning systems (GPS) and remote sensing (RS), farmers can now refine nutrient recommendation and water management models to the site-specific conditions of each field.

Substantial variations in soil properties and nutrient and water availability exist across most fields. Thus, the ability to apply site-specific nutrient and irrigation management to match spatially and temporally variable conditions can increase application efficiencies, reduce environmental impacts, while improving yields. Precision farming technologies have now been developed to spatially vary nutrients and water prescriptions within a field based on various information sources (soil properties maps, terrain attributes, remote sensing, yield maps, etc.). Precision agriculture involves the integration of the new technologies (including GIS, GPS and RS) to allow farm producers to manage within field variability to maximize the benefit-cost ratio. Variable rate technology (VRT) available with farm implements, such as fertilizer or CPP applicators and yield monitors, has evolved rapidly and has fostered the growth of precision agriculture.

The intent of this fact sheet is to present new and innovative tools and applications as well as sound management practices to aid our participants advance their farming operations.

New Technology and Innovative Approach Fact Sheet

Why measure chlorophyll?

Chlorophyll is the green pigment that allows plants to photosynthesize. This process uses sunlight to convert carbon dioxide and water into the building blocks of plants. Because nitrogen is a part of chlorophyll, by measuring chlorophyll, one can indirectly measure the amount of nitrogen in the plant. This allows for more efficient scheduling of fertilizer

SPAD 502 Plus Chlorophyll Meters quantifies the health of your crops *

Use an iPhone, iPod Touch, or iPad, with the FieldScout GreenIndex+ App to capture and compute the DGCI of your plants, and indicate their chlorophyll/nitrogen levels*

FieldScout CM 1000 Chlorophyll Meter *

Soil moisture plays a key role in the life of the plant. Nutrients in the soil solution provide the plant with the food it needs to grow. Water is also essential for regulating plant temperature through the process of transpiration. Plant root systems are better developed when growing in moist soil. Excessive levels of soil moisture, however, can lead to anaerobic conditions that can promote the growth of plant and soil pathogens.

Soil Moisture Meters*

Soil Moisture Sensors*

Why Measure compaction?

The soil is the plant's reservoir of water, nutrients and oxygen. Compacted soil has less pore space to store what the plant needs. Soil compaction prevents moisture penetration, reduces fertilizer and chemical uptake, creates conditions for anaerobic microbes to build up and hinders plant root growth. In some cases, yield losses can run as high as 30% due to compaction alone.

Soil Compaction Meter

Soil Compaction Tester

Turf Firmness Meter

*Spectrum Technologies, Inc.

New Technology and Innovative Approach Fact Sheet

Plant nutrition is only one of more than 50 factors which directly affect both crop yield and quality. The availability of required nutrients, together with the degree of interaction between these nutrients and the soil, play a vital role in crop development. A deficiency in any one required nutrient or soil condition that limits or prevents a metabolic function from occurring can limit plant growth. Soil testing is the base for management decisions about fertilizer requirements. It involves the estimation and evaluation of the available nutrient status and acidic reaction of a sample of soil. After testing, a fertility map should be prepared where the available nitrogen, phosphorous and potassium can be marked as low, medium or high. Areas of sufficient and insufficient nutrients may be marked out and nutritional requirements can be determined. Fertilizers such as NPK, lime or gypsum can be recommended to improve soil fertility. Fertilizer addition, which is based on soil testing, usually leads to an increase in yields and profits by providing the correct amounts of needed nutrients. It also leads to uniform applications of nutrients in a field. As nutrient availability becomes less variable, the crop growth is more uniform. Regular soil testing also contributes to environmental sustainability as the use of excess fertilizers can be avoided. Keeping in mind the requirements and significance of the soil nutrient analysis; ACMAS Technologies PVT.LTD has developed a compact micro processor based soil nutrient analysis system. The soil nutrient analyzer can quickly test the Np, P, K, hemic acid, organic matter, salinity, and PH in the soil, fertilizer and plants, and also can have a computer connectivity to log on the data in the system.

Soil Nutrient Analysis Meter (ACM-SNA-2677)

Based on advance electronic technology for soil analysis, water analysis, pollution control, laboratory analysis, soil testing etc. Complete unit is housed in a briefcase to work on battery rechargeable cum mains. Unit is supplied without O.R.P. electrode with instruction manual.

Digital Soil Analysis Kit (ACM-SAK-2681)

The sampling of soil in liquid state has always been of great concern to scientists and researchers for the simple reason whether or not its original characteristics are intact.
Weiber's Suction Pressure Type Soil Suction Sampler is ideal equipment for soil solution sampling at site by use of suction pressure- positive or negative. Our soil solution sampler is useful for supervising the changes in composition of chemical compounds of soil and also, for repetitive soil sampling procedures

Soil Suction Sampler (ACM-SSS-2676)

Best Management Practices (BMPs)

BMPs are farming methods that assure optimum plant growth and minimize adverse environmental effects. The BMPs presented here are directed primarily toward minimizing environmental damage from nitrogen and phosphorous. A more inclusive set of BMPs is provided in the Nutrient Management Plan.

1. *Get a Soil Test.* Nutrients should be applied to soils only as necessary. To know the soil's nutrient-supplying capacity, you must have it analyzed by a soil test laboratory.

2. *Follow Soil Test Recommendations* .A soil test report indicates the amount of nutrients that the soil can supply and recommends the amount, if any, needed from other sources. The test also recommends the amount and kind of lime to apply if the pH is too low. All of the recommendations should be followed completely because a deficiency of one nutrient or an undesirable soil pH will limit crop response to the other nutrients.

3. *Set Realistic Yield Goals.* All fertilizer recommendations assume a certain yield goal for the crop to be grown. Some laboratories ask for your goal, whereas others use an average number. The yield history of a field is the best guide to realistic expectations. Also, county soil surveys include crop yield estimates by soil series. Factors such as the soil's moisture supplying capacity should be considered.

4. *Choose the Most Suitable Nitrogen Sources.* It is important that nitrogen remain in the root zone long enough for it to be used by the growing crop. Regardless of its source, once nitrogen is in the plant it will not be lost and will not become a pollutant.

5. *Apply Nitrogen and Phosphorus Correctly.* Nitrogen and phosphorus are less likely to be lost by erosion or runoff if they are banded directly into the soil or applied to the soil surface and promptly mixed into the soil by disking, plowing, or rotary tilling. Subsurface banding also makes it possible for nutrients to be placed directly where the crop can make the best use of them.

6. *Time Nitrogen Applications Appropriately.* The timing of application is more important with nitrogen than with any other nutrient because nitrogen is applied in large amounts to many crops and is very mobile. Phosphorus is very stable once it is mixed into the soil and can be applied when most convenient.

7. *Use Manure as a Nutrient Source.* Manure and other waste or by-product materials can be excellent sources of nutrients if managed properly. The basic procedure is to collect and analyze the material to determine the nutrient content and then apply it in a recommended manner at rates based on a soil test report.

8. *Control Erosion.* All nutrients can be lost when soil is eroded, but phosphorus is especially vulnerable. The primary way to prevent phosphorus loss is to control erosion. A conservation farm plan providing for erosion control should be developed. Use conservation tillage and other erosion-control practices to minimize loss of phosphorus that is attached to the soil.

9. *Manage Water Flow.* Water management is closely related to erosion control, and some practices overlap. In general, erosion is minimized when water flow is slowed or stopped.

10. *Fence Animals Away from Streams, Drains and Critical Areas.* The first step in manure nutrient management is to control where the manure is deposited.