IMPROVING THE SUSTAINABILITY OF MALIAN SHEEP AND GOAT FARMING

FINAL REPORT

Volunteers for Economic Growth Alliance Special Program Support Project
Browse and Grass Growers Cooperative: Farmer-to-Farmer Mali
March 23, 2015 – March 22, 2016

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BROWSE & GRASS GROWERS

FARMER-TO-FARMER

VEGA
Volunteers for Economic Growth Alliance

Improving the Sustainability of Malian Sheep and Goat Farming

Common Pastures Initiative

Farmer-to-Farmer Mali
VEGA Special Program Support Project
Final Report

Browse and Grass Growers Cooperative
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March 23, 2015 - March 22, 2016
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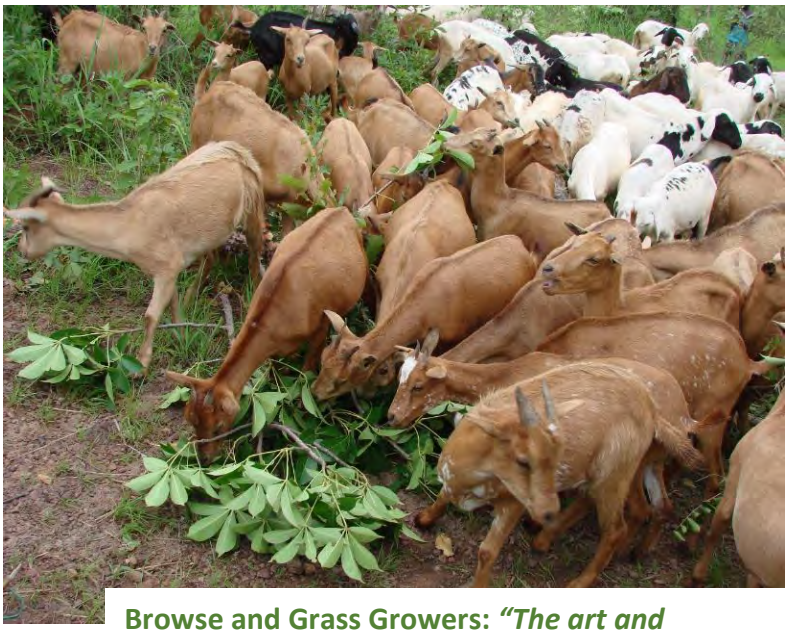
COMMON PASTURES: Sustaining flocks, farms, and families initiative is implemented by the U.S. based Browse and Grass Growers Cooperative as a Volunteers for Economic Growth Alliance (VEGA) Special Program Support Project funded by the U.S. Agency for International Development (USAID).

This report marks the end of the first year's successful Farmer-to-Farmer (F2F) initiative in Mali, West Africa, actualizing the **concept of farmers helping farmers and cooperatives helping cooperatives**.



Browse and Grass Growers: *"The art and science of integrating grazing animals, with trees, shrubs, crops and pasture."*

CHALLENGE: The nomadic or semi-nomadic grazing traditions and techniques are quickly becoming less effective and not transferrable to the smallholder farmers' more confined flocks. This is due to many factors including: climate change and sparse grazing areas being broken up by increased violence and drought in the north; large landholders, open pit mining and foreign investors in the south, Grazing is basic nutrition for ruminants and is a critical asset for low-resource livestock farmers.

Internationally, improving small ruminant production and marketing practices through information, technical training, and value-chain development is a primary need for small-holder farmers and is critical for Mali farmers.

Meet some of the program beneficiaries and members of the Mali team on the self-funded video by volunteers at www.youtube.com/watch?v=eJmVhjOdm5k

The Goal of this project was to enhance the quality of life for farmers and their families through information, training, and cost-effective implementation of sustainable small ruminant production, management, and marketing practices.

The Program Beneficiaries are small-holder, low-resource, cooperative members, potential members, and their families, including youth, single and widowed women, farmers with disabilities, and students attending agricultural schools.

Hosts are smallholder, low-resource, farmer cooperatives, and agro-pastoral institutes in the Koulikoro, Sikasso, and Ségou regions of Mali, West Africa.

There is a high regional demand for Malian livestock and meat. Mali possesses the most important livestock population in West Africa. Livestock products rank among the top 10 agricultural commodities produced in Mali and the combined value accounts for approximately half of Mali's agricultural GDP (FAO, 2014). Small ruminants are especially important in rural Mali as 80% of the population own sheep and/or goats and depend on their contribution to family income and food security. They are a socially acceptable business for women, with low initial investment, minimal labor demand, and easy market access. Youth and young children safely interact and share in the daily care of sheep and goats, keeping both out of trouble for much of the daylight hours outside of school.

And yet, livestock inventories over the last 20 years have not been increasing in productivity and are far behind the productivity rates in other developing countries. The demand for animal products in Mali is only partially being met while the demand for meat is predicted to grow steadily in coming decades (FAO, 2014). The productivity of Malian herds will need to improve dramatically to prevent the gap between demand and supply from increasing further.

Method: Technical support, training, and resources were provided with a focus on integrating small ruminant production and nutritional needs with crops and browse (e.g., renewable, high protein, legume trees). A holistic management system was supported that combines best practice and humane livestock protocols with sustainable land management.

Activities addressed by the volunteers included:

1) Identification of opportunities to improve pastoral land use;
2) Application of feed supplementation strategies; and
3) Upgrading of healthcare, breeding, nutrition, and farm management practices.

Identifying opportunities to improve pastoral land use, browse, and forages.

Volunteer
Andres Cibils

Results

$190,040 Value of volunteers time leverage on assignments.

$13,214 Contributed by hosts.

$111,526 Additional leveraged and donated funds from community supporters.

1,611 Small farmers trained.

1,925 Persons directly benefited.

16 Hosts benefited.

78 Professionals trained.

400 Students and youth trained in the village and at Agro pastoral schools.

32 Farmers with physical disabilities trained.

3,000 High-protein forage, legume trees donated, planted, and set up demonstration site.

10 Breeding rams and bucks donated. Valued at $4,000.

4 New agro-pastoral school partnerships established.

2 Private veterinary organization new partnerships.

2 University students completed 10-month internships and received stipends to provide follow up support to the hosts.

Improving Pastoral Land and Forage Use

Above: Volunteer Moses planting legume sapling. There is increasing human and livestock pressure on the available land and forage resources. The efficiency with which livestock can convert feed into meat and milk is greatly reduced when only poor quality forage is available. This results in major weight loss, stunting, and high death loss.

Legume & Forage Trees:
Leucaena leucocephala, Glyricidia sepium, and Moringa oleifera

"We never thought to grow trees to feed animals." Village Elder

Below left: Planted over 3,000 legume trees including a donation of 2,000 trees from *Asher Plants Trees*, 11-year-old grandson of a volunteer. Below right: New seedlings

High Nutrient Tree Forage

Moringa oleifera is one of the amazing trees common to Mali. It is known for its high nutritional value for people. Rare for a plant source, it contains all the essential amino acids (proteins). Gram-for-gram it contains seven times the vitamin C of oranges, four times the Vitamin A of carrots, and four times the calcium of milk. It is also said to increase the milk production of goats.

Moringa, Leucaena, and Glyricidia grow readily from seeds or cuttings, in marginal soil, and with very little water. They produce fruit and leaves within 8 months.

Utilizing local feed as supplements:

- High protein legume forages, (testing +/- 25%)
- Urea treated crop residues,
- Cassava silage,
- Molasses blocks.

Three assignments focused on legume trees:

- "*Facilitate the intercropping of legume forage trees on small farms and establishment of a demonstration site,"* by Margaret Summerfield, Ph.D. with donation assistance from grandson Asher Plants Trees;
- *"Improving small ruminant nutrition through local forage trees,"* by Thierno Hady Diallo;
- *"Improving Small Ruminant Nutrition through local forage and cassava,"* by Harouna Maiga, Ph.D.

Legume Forage Tree Demonstration Site

at the Village of Katibougou.

- 1 Hectare
- Fenced
- Well
- Pump
- Irrigation being prepared
- Water storage tower in process (photo on right)

Silage Improves Nutrient Value of Crop Byproducts

Treating low quality crop residues such as maize or wheat straw with urea is an easy method to increase digestibility and productivity of livestock. It is commonly done below the ground in lined pits or above the ground in bags. After mixing urea, water and straw, the pits are sealed for at least 3 weeks. The treatment of crop residues can be done any time as long as the residue, water and urea required for the treatment are available. The best period recommended, however, is just after harvest as the forage supplies are readily available at this time.

Ammonia is released through urea degradation done by the action of microorganisms. These microorganisms are normal inhabitants of low quality roughage and produce urease in the presence of moisture. With adequate moisture and suitable temperature, urea is degraded to ammonia which then permeates through and binds the straw. The nitrogen is released through the process and is used as the building block for the production of protein by the animals' digestion process and the rumen microbes. The treated roughage will be significantly higher in digestibility and crude protein than the untreated material.

Why Urea? Fertilizer-grade urea is readily available in many developing counties. It improves the nutritional quality of roughages such as crop residue. It is very simple and effective process to improve the intake of poor quality feed. Begin urea treatment when crop residues are plentiful before needed during the dry season.

Recommendation: It is recommended that farmers feed urea-treated roughage to their animals with the highest nutritional requirements, such as lactating or fattening animals. Other farmers may find it beneficial to feed limited amounts of the treated roughage as a supplement, with the remainder of the animals' diet being untreated roughage or grazed forage.

Below Left: Volunteer Gipson checks the dimensions of the in-ground silo. Crop residues (e.g., bush straw, corn stalks, sorghum stover, or rice straw) being treated with urea. Residues from corn or sorghum should be chopped to provide a greater surface area for the treatment process and to increase subsequent intake by the animal.

Method: Suggested level of urea is 5 kg per 100 kg of material. The moisture level in the roughage determines how much water should be added may range from 0.3 to 1 liter of water per kg straw. The moisture level can be estimated by handling. Dry (95%) will be brittle, whereas wet (85%) will be sticky and bend in hand. Urea is weighed and dissolved in a measured quantity of water. Then the urea-water solution is sprinkled on the residue and added to the pit in batches. Removing air from the pit is important and involves packing before covering with plastic, or leaves such as banana, and then soil.

Finished, covered silage pit.

There are many different designs of pits or trenches for urea treatment. A common recommendation is 1 m wide, at least 2 m long and 1 m deep and will typically hold between 150 to 200 kg of roughage with the top of the pile being slightly above ground level (see above). It is useful to construct more than one adjacent pit so that treated roughage from one pit can be used while the next pit is being treated. This helps to ensure continuous supply.

Apart from pits or trenches plastic bags (see cassava silage project, page 9) that can hold 20 to 25 kg of treated straw may be used. Such bags have the advantage in that individual bags can be opened when needed to feed animals and resealed to prevent mold contamination.

A family of 4 can treat about 1 ton of straw in 4 hours.

Success! Below Left: Treated crop residue after being allowed to ferment for two months tightly covered to prevent air contamination. The results were excellent with no signs of mold.

Above: The sample on the left is crop residue treated with urea to increase the nutrient value.

In comparison, the sample on the top right is untreated and has minimal nutrient value except as a source of roughage. Small ruminants will not maintain body condition or produce milk on a low nutrient, roughage heavy diet.

Processing Cassava Byproducts for Silage

> *"Meeting feed and forage requirements of small ruminants is the most urgent need for livestock smallholders in the agro-pastoral systems of Mali."*
>
> Cibils et al. 2015, *Challenges and Opportunities for Agro-pastoral Livestock Smallholders in Mali*. Outlook on Agriculture 44: 69-80).

Feed supplementation with a crop byproduct that is usually wasted (no urea added). Cassava is a starch tuber raised by smallholder farmers for human consumption. It grows well in poor soils and on marginal and degraded land. It survives drought, intense tropical sunlight and heat, so provides a stable source of food and income when other crops fail. The foliage part of the plant is highly prolific but toxic to livestock when fresh due to the hydrocyanic acid in the plant.

Cassava dry hay and silage is safe to feed to animals but needs drying or simple processing so it will be digested efficiently. The silo bag curing method was used to convert the waste byproduct to a safe feed for livestock with resultant crude protein (CP) at approximately 13%. This compares to cassava hay at approximately 8% CP and the desired cowpea hay at 12% CP. **With over 4,000 hectares of cassava grown in the area** we work, silage would be an important product for milking herds and could be a profitable small business for an entrepreneur.

Information on cassava production, management and its importance in both human and animal nutrition was demonstrated to two farmer cooperatives, in addition to students at the University of Segou, and two Agro Pastoral schools.

The role of hydrocyanic acid in cassava plants and how to manage it was explained to farmers to lessen their fears of livestock poisoning. Cassava hay and silage preservation techniques were demonstrated and product produced and consumed successfully. Ration formulation with specific examples for fattening lambs for Tabaski was included using cassava and other feeds.

Molasses Blocks from Local Ingredients

Above: Production of Urea-Molasses Blocks with volunteer Terry Gipson.

Recommendation: Produce urea-molasses blocks for supplemental feeding during the dry season and as an income generating small enterprise. If molasses is not available, substitute a suitable replacement such as honey or a fruit syrup, such as from mangos when they are plentiful.

Sheep and goat diets in Mali are based on fibrous, low nutrient feeds like mature pastures and crop residues. These feeds are deficient in protein, minerals and vitamins and are poorly digested keeping intake low. Supplementation with urea molasses blocks can increase digestibility of fibrous feeds by up to 20%, and increase nutrient and feed intake by up to 30%. During the process vitamins, minerals, and protein can be added.

The taste-testers give their approval

Upgrading Flock Genetics

Breeding support provided:

1. "*Upgrading Breeding Stock: selection, crossbreeding and purchasing replacements"* by Harouna Maiga, Ph.D. University of MN, Crookston

2. "*Upgrading Breeding Stock: selection, and cross-breeding part 2"* by Terry Gipson, Ph.D, Langston University, Oklahoma.

Left and below: Seven goats and thirteen sheep were provided to six farmer cooperatives that met flock upgrading goals. The cooperative members received ongoing support from the University of Segou agriculture intern students as part of their field work. Private donations help support this project. Bali Bali and Moor sheep breeds and Sahelian goat breeds were chosen for improved genetics (see details page 16).

Regardless of breed, the choice of a breeding male is usually based upon:

- Age: Younger breeding males have a longer service expectancy than older.
- Health: Check ocular membranes and overall appearance.
- Confirmation: Males selected for breeding should be taller in stature, longer in length, and with depth of chest cavity than cohorts, and two well-formed testicles

Recommendations

Castrating all inferior males and controlling the breeding of goats and sheep is critical or there will be no genetic improvement. Intact males currently run with the flock and breed freely.

An understanding of inbreeding and its negative consequences is lacking and will be important follow up training for flock improvement.

Flock Healthcare and Surveillance

Improved Small Ruminant Health and Management" by Scott Haskell, DVM;

Veterinarian supply centers and animal health trainings were established at six farmer cooperatives. The supply centers provide basic medication and tools to be purchased and replenished by the farmers as used.

Participants developed skills and experience in the diagnosis and treatment of common livestock diseases not generally requiring treatment by veterinarians (e.g., internal and external parasite, poor nutrition, lameness) through the use of: hands-on field training, and the "See one, do one, teach one" method. **Flock surveillance** included noticing behaviors such as: standing alone, poor appetite, abnormal walking or other muscular movements, hunched back, diarrhea, abnormal respiration, or grinding teeth. The farmer's flock or a market animal considered for purchase can be screened in a few minutes for common issues.

A treatment rubric was developed for the cooperative members utilizing simple Body Condition Scoring, respiration and temperature. A veterinary medical treatment and diagnosis 'kit' was provided to the cooperatives to sustainably manage their resources. Each medicament was price structured so that members could purchase items on a 'per pill' or' per ml' basis as needed and thereby maintaining a stable inventory.

Veterinarian supervision was provided to the cooperative members and the University of Segou Animal Science students during their field internship by **MEDIVET**, Bougouni, and the **Private Veterinary Unit,** Koulikoro**.**

During their internship, the students examined and vaccinated **10,639 ruminants;** and conducted follow-up trainings to **158 farmers** on nutrition, health and breeding. They also attended and assisted at all the volunteer trainings.

TECHNOLOGY:

GPS was used to better understand grazing patterns, dry matter intake potential and to educate farmers on overgrazing, inadequate grazing, and erosion threats.

"Develop improved rangeland-based small ruminant production and nutrition systems" in Bougouni and Segou by Andres Cibils, Ph.D.

GPS Data Points Plotted on Google Earth

Helps to improve current feeding practices by understanding:

1) The kinds and amounts of feed that small ruminants in agro pastoral villages are likely harvesting while grazing; and
2) The amount of energy that they expend in doing so.

The visual display of information was helpful to demonstrate to farmers the distance their animals' travel per day to graze. The yellow and red points (upper right corner and mid area) on the map show the movement during one day of the collared livestock as they were herded from the villages to the Niger River riparian area walking 8 to 13 km daily for food and water.

Sun Cookers to Help Save Browse & Trees

Six cooperatives were trained to build and use solar stoves. *"Capacity Building for Women"* by Bonnie Loghry above. Materials were sourced locally and plans provided.

Deforestation and soil erosion is an increasing problem that affects both human and animal feed availability. Discussions on decreasing the need for wood as fuel helped to make the connection between solar cooking and small ruminant production

Fabrication of solar cookers was used as a potential means to reduce deforestation and to improve available small ruminant fodder, lessen lung and eye diseases, and stimulate small-holder business income. Demonstrations of sun movement, angles, cloud, and wind conditions provided the students with concrete examples of factors influencing the success or failure of solar cooking. Creation of a small business model for production, marketing and sales of solar cookers for potential future use was included. Farmers with disabilities were actively sought and welcomed to all trainings, but especially this one.

Farmers with Disabilities

All assignments were open and welcoming to farmers with disabilities. Over 30 individuals with disabilities, including physical, vision and hearing issues, participated.

Physical disabilities were common due to a polio epidemic many years ago and recent military upheaval. Farmers own land, and actively tend fields and livestock with the support of children and extended families.

Farm Management & Marketing: **Agro Pastoral Schools**

Four assignments were focused on farm management and marketing. These assignments had classroom trainings for agro-pastoral school students in addition to the village trainings for farmers.

Assignments included:

- "*Profit or Loss: Business side of supplementing small ruminants grazing on common lands"* by Otto Wiegand, Ph.D.;
- *"Capacity Building in Start-up Business Implementation and Management"* by Michael Lowry;
- "*Marketing Assessment from Grass to Table"* by Ashton McGinnis; and
- *"Viability of Dual Goat Breeds for Meat and or Milk Production"* by Judith Moses.

Training and Trust Building in Remote Villages

"When my country was suffering you brought us…oxygen." Host.

"As we post photos and stories to outlets like Facebook and Instagram, people I haven't seen in years have come calling with questions, asking for stories. Very few of the people we've told these stories to have known anything about Mali, even down to its location on a map. Even more unknown is the state of the country, and the people.

It is unfathomable to many just how important this work is, ***to think of sustainability not in the sense of 'eco-friendly', but rather in the capacity to endure."*** *Volunteer Ashton McGinnis*

Activities by Country: Mali, West Africa

Activity	Volunteer	Date	Days
SOW 001: 1) Improved Small Ruminant Health and Management. 68 M / 91 F	Scott Haskell, DVM	Jun 8 - Jun 25	18
SOW 002: Capacity Building with Women Groups for a Sustainable Small Ruminant Production. 68 M / 91 F	Bonnie Loghry, MPH	Jun 8 - Jun 25	18
SOW 003, a & b: 1) Upgrading Breeding Stock: selection, crossbreeding & purchasing replacements. 184 M / 74 F 2) Improving Small Ruminant Nutrition through local forage (cassava). 91 M / 29 F	Harouna Maiga, PhD	Jun 12 - Jul 14: July 20 - Aug 6.	44
SOW 004: Develop improved rangeland-based small ruminant production and nutrition systems. 59 M / 10 F	Andrés Cibils, PhD	Aug 1 - Aug 19	19
SOW 005: 1) Improving Small Ruminant Nutrition through local forage; 2) Develop & conduct 2 Agro-pastoral school trainings at Koulikoro and Sikasso. 91 M / 29 F	Thierno Hady Diallo, MS	July 14 - Aug 2	16
SOW 006: Profit or Loss: Business side of supplementing small ruminants grazing on common pastures. 85 M / 79 F	Richard Wiegand, PhD	Aug 1 - Aug 19	19
SOW 007: Facilitate the intercropping of legume forage trees on small farms and est a demonstration site. 56 M / 10 F	Margaret Summerfield, PhD	Aug 6 - Sep 4	22
SOW 008: Marketing Assessment from “Grass to Table.” 11 M / 2 F	Ashton McGinnis	July 25 - Aug 9	16
SOW 009: “Grass to Table” Part 2: Viability of Dual Goat Breeds for Meat and Milk Production. 95 M / 81 F	Judith Moses, MS	Aug 5 - Sep 4	25
SOW 0010: Upgrading Breeding Stock: selection, crossbreeding & purchase replacements. 116 M / 19 F / 72 Y	Terry Gipson, PhD	Feb 9 - Mar 1	22
SOW 0011 Capacity Building in Start-up Business Management. 24 M / 25 F / 18 Y	Michael Lowry	Nov 20 - Dec 2	13
Total:	**Volunteers: 11**		**232**

Performance Indicators, Targets, and Impact

Indicator	Target	Actual
Number of Volunteers	**10**	**11**
Number of Hosts Strengthened	20	16**
Number of Person Trained	600	1,611
Number of Families Benefited *	1,800	4,833
Agriculture Professionals	40	78
Students and Youth	60	416
Farmers with disabilities	25	32
Total Days	195	232

*Average Mali family size estimated as 4.
**Due to heavy rains and unpassable village roads Volunteers was unable to logistically reach hosts.

*Performance: We fielded an **extra volunteer** and exceeded the majority of our targets!*

Sheep and Goat Donations as of April 1, 2016

Cooperative members must reach specific goals before receiving breeding stock.

Regions	Villages	Improved Breeds						Notes
		SHEEP			GOAT			
		Ram		Ewe	Buck		Doe	
		Bali-Bali	Moor	Bali-Bali	Sahelian	Moor	Moor	
Koulikoro	Dladie	1	0	1	1	0	0	
	Mafeya	2	0	1	1	0	0	
	Katibougou	0	0	0	0	0	0	
	Tanabougou	0	0	0	0	0	0	
	Tienfala	1	0	1	1	0	0	
TOTAL	**3**	**4**	**0**	**3**	**3**	**0**	**0**	
Sikasso	Bougouni	1	1	2*	1	1	2	* Ewe died
	Toula	1	0	0	0	0	0	
	Solla-Bougouda	1	0	0	0	0	0	
	Mena	0	0	0	0	0	0	
TOTAL	**3**	**3**	**1**	**2**	**1**	**1**	**2**	
TOTAL	**6**	**7**	**1**	**5**	**4**	**1**	**2**	

Public Outreach

Publications:

Farmer to Farmer Project makes Progress in Mali. Jan 2016. WI Agriculturalist. Circulation 26,000.

Winrock International Interventions, circulation 3,000 March 2016 http://us1.campaign-archive2.com/?u=cee7d573e6c3474e9cf3922c4&id=c34eae2eaf&e=da2f1563a9

Dladie Village Shepherds in Mali, West Africa (2012), Handout on volunteering in Mali.

Rainy season herding patterns of agro-pastoral livestock smallholders in southwestern Mali: A preliminary GPS-based assessment, accepted for a poster session and publication in the 2016 International Rangeland Congress Proceedings.

Workshops, Conferences, and Classroom:

- NW Graziers Fall Conference in Spooner, Nov 2015, presentation on forage trees including Mali. 35 attended.
- Presentation and display on F2F in Mozambique, Kenya and Mali at NW Regional Extension Conference, Eau Claire, Feb 2016. 20 people.
- Introductory Range Science course. Sep 2015. 97 students.
- Range Ecology course. Sep 2015. 30 students.
- Graduate students and colleagues. Ongoing updates as project progresses to 15.
- *Small Ruminant Clinic*, University WI Extension, Baldwin, WI. April 20th. The presentation included slides showing small ruminant production and marketing. 36 attended.
- Vega Anniversary, Panel. Dec 3, 2015. 100 attended
- Church groups (2). 83 attended.
- Synagogue presentation. 102 attended.

Outreach:

- Over 100 soccer balls donated from a soccer ball organization.

- Discussed with over 120 members of the community face-to-face and an additional 60 emails for donations towards the legume tree project. Individuals and small groups of five to 10 people were contacted in Maine, Texas, California, Wisconsin, and Minnesota.
- Volunteer talked about the project to approximately 80 ex-students.
- Social media on volunteers' Facebook pages, three Youtube channels, Vimeo, two websites, LinkedIn pages, Twitter, Google+, Instagram.
- 20 flash drives and two CDs with video and PowerPoint information summary.
- Email news list four times to 90.

Technology:

The Common Pasture's project successfully used and will expand the use of drones and GPS tracking collars and remote sensing tools to understand grazing patterns. Freeware developed by the Minnesota Department of Natural Resources was used to download GPS data. Social media blogs on this activity has resulted in inquiries from India, and Botswana researchers and NGOs.

Video and digital cameras, Skype, social media, and messaging were commonly used both by volunteers and participants. Many trainings were partially videoed on cell phones by participants. The trainings provided at the four Agro-pastoral schools and the University of Segou were all fully video- and audio-taped for classroom use.

Demonstrating drone used by volunteer McGinnis and friend for videoing grazing patterns and surrounding area.

Expected Impact:

- The workshop participants will successfully treat crop residues with urea, ensile, and feed to ruminants, thereby increasing the nutritional status of livestock.
- One or two cooperatives or individual members will manufacture urea-molasses blocks for supplementation of small ruminants, thereby increasing efficiency of production and resulting in improved nutrition during the dry season. Making them available for sale in the surrounding villages could potentially be a source of income for a small group.
- The farmer cooperatives that received improved Bali-Bali, and Moor breeding rams and Sahelian bucks will see offspring on the ground and the economic returns of improved selection. The basis for sustainable sheep and goat improvement is nutrition and basic herd health and this takes time.

- Legume trees will be grown, protected, and utilized as a feed source. Leaf fodder will be dried and stored for supplementation during the dry season. Protein is generally around 25 percent so no more than 20-30% leaf fodder is needed.
- Rations will be balanced to the extent possible and recipes shared with fellow cooperative members and the project team. Pregnant, lactating, and growing animals will receive the most attention and be separated for feeding if necessary.
- Methods of alternative feed supplementation will be explored, such as dried ground nut foliage, ensilaged cassava, and urea treated rice straw. Results will be shared with fellow cooperative members and the project team.
- Health surveillance by the livestock owners will be initiated and basic health care provided. Consultation with local veterinarians sought as appropriate.

"This boy said he was coming to Africa to plant trees. And he came. When he returns he doesn't knock, but enters, as my son."

Village elder

"I learned….I will always have a home in Africa,"

Asher Plants Trees

Organizing legume saplings for distribution at Bougouni

Browse and Grass Growers Cooperative

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June 4, 2015

Eric Wallace
Farmer-to-Farmer Special Program Support Project Director
Volunteers for Economic Growth Alliance
1726 M St NW
Suite 800
Washington DC 20036

Dear Mr. Wallace:

Subject: Actions in Response to GAO Report on the Farmer-to-Farmer Program – "USAID Farmer-to-Farmer Program Volunteers Provide Technical Assistance, but Actions Needed to Improve Screening and Monitoring"

This confirms that the Volunteers for Economic Growth Alliance Farmer-to-Farmer Special Program Support Project (F2F SPSP):

- Does not engage in transactions with, or provide resources or support to, individuals and organizations associated with terrorism, including those individuals or entities that appear on the Specially Designated Nationals and Blocked Persons List maintained by the U.S. Treasury or the United Nations Security designation list. All potential volunteers are screened against these and other watch lists and this provision is included in all sub-agreements, including sub-awards and contracts issued under the F2F award.

- Carries out at least two reference checks on all potential first time F2F volunteers in addition to other required screening and carries out reference checks on all repeat F2F volunteers with regard to prior F2F assignments, and additional external references if no F2F assignments have been completed within the past 24 months.

- Immediately informs the USAID AOR of any negative F2F volunteer performance or behavior and provides information on such performance or behavior experiences to other F2F implementing organizations when contacted for reference checks on potential volunteers.

Sincerely,

Judith Moses, President

Browse and Grass Growers Cooperative

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May 13, 2016

Laura Alexander
Senior Program Manager
Volunteers for Economic Growth Alliance
734 15th Street, NW, 11th Floor
Washington, DC 20005

Dear Ms. Alexander:

Subject: Farmer-to-Farmer Special Program Support Project M&E Certification

The Browse and Grass Growers Cooperative confirms that we have: a) used established indicators and definitions; b) participated in regular (annual) workshop reviewing indicators and M&E systems; and c) trained field staff on indicators and data collection systems. The above mentioned training sessions include extensive instruction in the collection and reporting of indicators.

Sincerely,

Judith Moses
President
Browse and Grass Growers Cooperative

Improving the Sustainability of Malian Sheep and Goat Farming

Browse & Grass Growers Cooperative
Farmer-to-Farmer Mali
March 23, 2015 - March 22, 2016

CASE STUDY

Contact Name: Judith Moses
Contact Email Address: jmoses@pacer.org
Contact telephone: (715) 265-7637
Mailing Address: N12835 County Road Q, Downing, WI 54734
Website: www.commonpastures.org

Background:

Meeting feed and forage requirements of small ruminants is the most urgent need for livestock smallholders in the agro-pastoral systems of Mali according to a meta-analysis of documentation associated with 36 USAID-funded F2F volunteer assignments and **involved input from over 1,100 smallholder farmers** (Cibils et al. 2015, *Challenges and Opportunities for Agro-pastoral Livestock Smallholders in Mali*. Outlook on Agriculture 44: 69-80)**.**

Challenge:

The small ruminant paradox: In the rural villages crop cycles dictate access to grazing resources for small ruminants in contrast to the migrating, grazing patterns of traditionally herded flocks. During the rainy season, when quality and quantity of forages are the highest and grazing would be the most nutritious, the smallholder's sheep and goats are generally confined or tightly controlled to prevent crop loss. Conversely, during the dry season when forages are dormant and scarce, small ruminants are allowed to freely scavenge among crop residues and native forage that have over-matured with resultant low-nutrient value. Young, growing, pregnant and lactating animals suffer the most under these methods and their genetic potential is seldom reached. This system results in high levels of abortions, delayed puberty and long intervals between parturitions, high pre-weaning and adult mortality, and low offtake rates. This paradoxical mismatch of nutrition to small ruminant life cycle needs severely undermines food security.

Initiative:

Grazing provides basic nutrition for ruminants and is a critical asset for low-resource farmers. The common but often false assumption, that small ruminant's nutritional requirements can be fully met through grazing is probably based on pastoralism traditions. In this model the flock is constantly moving forward across the sahel and savanna, away from manure harboring parasites and to fresh forage. As long as their movement is unobstructed, and the animals can pick and choose, nutrition is likely to be adequate. In contrast, smallholder flocks are confined to common grazing lands that are frequently overgrazed, contaminated by manure harboring parasites, and have limited fresh browse options. In this system supplementation is critical. GPS tracking technologies were used to better understand the quality and quantity of available forages, and the likely amount of energy expended harvesting it. Farmers were educated on overgrazing, inadequate grazing, and erosion threats. Improving pastoral land use and identifying local feed supplementation options are important first steps to improving food security.

Results:

By merging satellite and geospatial technologies, grazing locations and activities were visually displayed and showed potential nutritional gaps. Whereas cattle harvested about 90% of their daily dry matter requirements, small ruminants harvested a much lower, 25-30%. Cattle were herded to distant locations, whereas small ruminants were herded on common lands adjacent to the village. Cattle left the village to graze approximately 2 hours earlier, returned later and grazed for over 7 of the 12.6 hours they remained in the field each day, whereas small ruminants grazed for less than 3 of the 8.8 hours of their daily herding route. Adults herded the cattle whereas children controlled the small ruminants. Discovering children were the gatekeepers for

nutrition improvements and were making grazing decisions based not on nutritional factors but on the location of the common water source and walking distance from the village resulted in a training emphasis that more directly targeted youth.

Knowledge Generation and Sharing

Livestock GPS telemetry was utilized to capture information. The data was downloaded using freeware developed by the Minnesota Department of Natural Resources, given the correct geographic projection (WGS84 and UTM zone 29N) and mapped on a Google Earth satellite image. The data was also imported into Microsoft Excel and analyzed to calculate distance traveled by each collared animal and to explore daily activity patterns.

The discoveries that this technology will allow is important in developing strategies to use high protein supplements (e.g. legume browse trees, cassava, urea byproduct silage) in the most cost effective and efficient manner. This knowledge will allow understanding: 1) the kinds and amounts of feed that small ruminants in agro-pastoral villages are likely harvesting while grazing; and 2) the amount of energy that they expend in doing so.

Social media blogs on this activity has resulted in inquiries from India, and Botswana researchers and NGOs. The information will be presented at an international rangeland conference. "*Rainy season herding patterns of agro-pastoral livestock smallholders in southwestern Mali: A preliminary GPS-based assessment*" and was accepted for a poster session and publication in the 2016 International Rangeland Congress Proceedings. The information will also be made available through online resources.

Photos

Youth gathering the flock for trek to water hole during the rainy season
Flocks from many villages may congregate at the water holes daily. Drinking water for livestock is a challenge for many villages even during the rainy season. In many instances the only water source available is a close-by river or seasonal water hole.

Collection Place for Trek to Water Hole
During the rainy season youth control the flocks to prevent crop damage. Youth appear to be the gatekeepers for nutrition improvements and tend to make grazing decisions based on the location of the common water source and walking distance from the village--not quantity or quality.

Bringing lunch.

Water hole during the rainy season

Confinement: Small ruminants are dependent upon cut-and-carry methods or restricted grazing usually monitored by youth lacking adequate information on nutritional needs. This requires a different kind of management kills than traditional nomadic or semi-nomadic herding.

Dry season free to scavenge. Frequently filling their rumens with plastics that will slowly stop the ability to digest food. Lactating, pregnant, and the young suffer the most under this sytem.

GPS was used to better understand grazing patterns, dry matter intake potential and to educate farmers on overgrazing, inadequate grazing, and erosion threats.

GPS Research of Grazing Patterns: Grazing is basic nutrition for ruminants and is a critical asset for low-resource livestock farmers.

GPS Data Points Plotted on Google Earth
Help to improve current feeding practices by understanding:

- The kinds and amounts of feed that small ruminants in agro-pastoral villages are likely harvesting while grazing; and
- The amount of energy that they expend in doing so

F2F PERSUAP

Browse and Grass Growers Cooperative
Small Grant
2015-2

F2F PERSUAP Assignment Data Table[1]:

Assignment (Trip) Number	Volunteer Name	Country	Country F2F Project	PERSUAP Assignment Type	Work Directly with USAID Mission or Mission-funded Project (Type 4) – Check for Yes	Training Syllabus Sent to F2F AOR/ Mission Environmental Officer (Type 1) – Check for Yes	Training Attended by USAID (Type 1) – Check for Yes
None							
Counts:							

Certifications of assignment and office compliance with PERSUAP guidelines:

A. PERSUAP Compliance – F2F Assignments

[Implementing partner] certifies that all volunteers have received the F2F Environmental Brochure. For all PERSUAP Type 1, 2 and relevant Type 4 SOWs, [implementing partner] further certifies the following have been provided to and developed by the relevant volunteers:

	Type 1 SOWs[2]	Type 2 SOWs[2]
Provided to Volunteer	• F2F PERSUAP with Attachments A - H • SUAP briefing with F2F field staff • Implementing Partner F2F PERSUAP Questionnaire • List of any IPM practices and any tools, forms, protocols, plans from previous volunteers • Host country list of approved pesticides • Approved pesticide list from any other applicable PERSUAPs	• F2F PERSUAP with Attachments B, C, F, H • SUAP briefing with F2F field staff • Implementing Partner F2F PERSUAP Questionnaire • List of IPM practices from previous volunteers

Developed/ Provided by Volunteer	• Syllabus for training event • Material Safety Data Sheets (filed in field office) • Any pesticides that the F2F program should be able to recommend/use which are included on an approved list • Limitations/successes of F2F PERSUAP • Recommendations for additional support on pesticide management practices • Recommendations/feedback on local IPM practices • Highly Toxic Pesticides (Attachment E)/poor pesticide practices witnessed • Tools, forms, protocols, plans for implementation of pesticide-related recommendations	• Limitations/successes of F2F PERSUAP • Recommendations for additional support on pesticide management practices • Recommendations/feedback on local IPM practices

B. PERSUAP Compliance – F2F Offices

Browse and Grass Growers Cooperative certifies that all F2F staff have reviewed the F2F Environmental Brochure for staff the fiscal year and that the following have been updated and kept on file:

	Home Office	**Field Office**
Documents Updated and on File	• F2F Environmental Brochure for staff • PERSUAP with Attachments A-I • Any USAID Mission- or sector-wide PERSUAP(s) for relevant country/sector	• F2F Environmental Brochure for staff • PERSUAP with Attachments A-I • USAID Mission- or sector-wide PERSUAP(s) for relevant country/sector • Host country list of approved pesticides[3] • Implementing partner F2F PERSUAP Questionnaire, with any volunteer additions • Material Safety Data Sheets for relevant pesticides[4] • Tools, forms, protocols, plans developed by volunteers

[1]Required only for PERSUAP Type 1 & 2 SOWs, and for Type 4 SOWs that follow Type 1 & 2 requirements
[2]If governed by F2F PERSUAP, Type 4 SOWs should follow requirements for Type 1, 2, or 3 SOWs, as most relevant
[3]Or, letter from host country government stating that there is no list of government-approved pesticides and noting any specific measures that should be taken when F2F volunteers recommend pesticides
[4]It is recommended that these documents be translated into local languages for distribution to relevant hosts and partners. Please note if they have been translated (in whole or in part), and if not, why.

CONTENTS

Improving the Sustainability of Malian Sheep and Goat Farming
Community Implemented Animal Health Care Systems
Assignment Number: MAL001
Scott R.R. Haskell, DVM, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* Regional Agricultural Chamber of Koulikoro – *representatives/advocates of producers*

Beneficiary Organization: Small Ruminant Cooperatives and Associations of Nara, Dladie, Banambra, & Kolokani (Koulikoro Region)	**Location of Project:** Koulikoro Region, Mali West Africa
Primary Contact: US Project Coordinator Judy Moses jmoses@pacer.org	**Date Project Started:** April 2, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: Project Director Bara Kassambara: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** Jun 8- Jun 26, 2015 and ongoing follow up throughout the year.
Brief background on beneficiary organization(s): In the Koulikoro region subsistence is gained mainly from crops. Small ruminants are kept as insurance against crop failures and as a source of income. Sheep herds are primarily open range grazing separately or with other livestock species depending on the availability of labor during the rainy season (June-September) and with little or no supplemental feeding throughout the dry season (December through May). Issues include: • Lack of appropriate trainings and experience in modern techniques of animal husbandry • Low production and productivity	**Objectives of the Assignment:** ***Primary objectives:*** • Assess the current animal health management practices • Put in place an efficient sustainable low cost and adaptable community managed small ruminant heath care system • Train members to reduce the prevalence of locally important infectious diseases • Improve knowledge of bio-security/quarantine, proper medicines, record keeping, identification • Include women in the health care decisions of community small ruminant flocks and herds

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- Lack of skills in sheep business management
- Economic strains affecting livestock markets
- High pressure on the natural resources (tree leaves) for feeding small ruminants.

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Long term objective:

- Small ruminant preventative health care will be carried out in a coordinated manner with a strong involvement of the local farmers.

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Tasks to be carried out:
The main tasks of the expert are to enhance the technical capabilities of the host organizations with volunteer technical assistance in livestock farm management and sustainable health management. Emphasis is to be placed on livestock disease surveillance and prevention. The specific tasks performed will be:

- Critically assess existing situations, problems and potentials of the current small ruminant farming and disease management practices
- Assess the regional veterinary and community animal health worker technical staff and field workers involved in related areas
- Develop a community based sustainable systematic disease diagnosis protocols, diagnostic approaches to problem solving and the development of area specific treatment régimes.
- Provide training on local small ruminant medical problems and treatments of diseases without overmedicating emphasizing food safety and security
- Provide hands-on training to the host technical staff and field workers on disease management and early detection/diagnosis with emphasis on small ruminants
- List livestock diseases based on field visits and provide recommendations to control these
- Suggest appropriate measures for best management practices (BMPs), especially increasing productivity and providing affordable animal health
- Discuss critical food safety issues with hygienic slaughter and the use of drugs in livestock

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Expected number of persons to be trained (m/f):
4 cooperatives (3-4 days each): approximately 10 F and 20 M members each cooperative for a total of 50 F and 100 M participants and 10 agriculture support professionals. Combined groups when feasible.

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Required expertise of Volunteer:
DVM, PhD. The volunteer must be a specialist in small ruminant production (sheep and goats), and experienced with low resource communities. A translator will be provided.

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Name of Expected Volunteer:
Scott R.R. Haskell, DVM, PhD

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Current Position of Volunteer:
Director 2006-Present
Veterinary Technology Program
Yuba College, Marysville, CA

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IMPROVING THE SUSTAINABILITY OF MALIAN SHEEP AND GOAT FARMING

Small Ruminant Production for Women's Groups: understanding and integrating gender issues into livestock projects
Assignment Number: MAL002
Bonnie Loghry, Master Public Health

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* Regional Agricultural Chamber of Koulikoro – *representatives/advocates of producers*

Beneficiary Organization: Small Ruminant Cooperatives and Associations of Nara, Dladie, Banambra, & Kolokani (Koulikoro Region)	**Location of Project:** Koulikoro Region, Mali West Africa
Primary Contact: US Project Coordinator Judy Moses jmoses@pacer.org	**Date Project Started:** April 2, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: Project Director Bara Kassambara: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** Jun 8- Jun 26, 2015 and ongoing follow up throughout the year.
Brief background on beneficiary organization(s): Enhancing women's control over small livestock production, providing training in husbandry and animal health as well as increasing access to education, veterinary and financial services is fundamental to improving household's food security and providing and additional source of income to meet household's needs. 'When managing small stock, women tend to	**Objectives of the Assignment:** 1. Assist women and their households to improve animal husbandry, including: • Household-based goat management; • Feed and nutrition; • Reproduction and birthing; • Mutton production and yield; and • Disease prevention and vaccines, diagnosis, treatment, and risk management 2. Provide capacity building for field staff to be

face a greater number of challenges, as compared to men, in accessing, maintaining and improving their small ruminant stock. Factors such as poor/ scarce technical skills in animal care and/or limited access to veterinary services, limited access to market and marketing skills and limited access to financial and extension services as well as natural resources and education, tend to limit women's opportunities to access, control and expand their small ruminant stock and production. The same factors mentioned above can also influence women's access to improved exotic breeds. Keeping exotic or crossbred livestock can be more difficult and usually requires a higher level of technical and veterinary expertise. As a consequence women can often only manage and control local breeds'. These are frequently easier to rear but often far less productive then the improved exotic breeds (FAO, 2011b). 'Understanding and integrating gender issues into livestock projects and programs is important. In rural livestock-based economies, rural women comprise two-thirds (approximately 400 million people) of low-income livestock keepers. In particular, activities related to small livestock production (poultry, sheep, goats), milking and processing of milk, are carried out mainly by women and, to some extent, by children' (Okali, 1998; Thornton, 2001; FAO, 2011a).	able to replicate training/mentoring to multiple groups of women, including consulting on: • Animal husbandry techniques above; and • Modeling learning-by-doing techniques. **3.** Improve family nutritional status – through production of higher yield goat and home access to fresh high-nutrient mutton and milk. 4. Incorporate basic literacy training into goat husbandry education 5. Open discussion on inclusion of members of the community with disabilities. ***Long term objective:*** • Increase revenue/resources through increased sales – through sales of increased yield/weight of goats and goat milk. • Improve food security – through staff replication of training/consulting to multiply impact to more households

Tasks to be carried out:

1. Visit various production, and market sites to better understand and address relevant concerns such as how to implement improved reproduction and breeding practices in Mali.
2. Provide information and training on occupational health and safety issues associated with small ruminant production (e.g., food safety, zoonotic disease, pesticide/herbicide management).
3. Educate livestock producers, agriculture students, and support professionals to better understand 'Best Management Practices' relevant to improved production.
4. Identifying and problem solve with groups on potential challenges to implement improved 'Best Management Practices' considering the resources and conditions throughout the region.
5. Develop 'Best Management Practices' calendar emphasizing Malian production practices.
6. Assist in the creation of simple business plans and record keeping systems for women.
7. Training women in simple solar cooking to decrease deforestation, improve food safety and promote greater free time for women. Note: Solar cookers can be constructed of local materials easily and inexpensively, saving women valuable cooking time, improving respiratory health,

decreasing deforestation, and increasing safety for women who no longer need to walk for miles to find fuel. For those who rely on foraged fuels, cooking is a dangerous and time-consuming job.	
Expected number of persons to be trained (m/f): 4 cooperatives: approximately 12 F members each cooperative for a total of 60 F participants and 6 agriculture support professionals. Combined groups when feasible.	**Required expertise of Volunteer:** Experience with nutrition, sustainable agriculture, small ruminants husbandry and their role for women; providing culturally sensitive gender practices in agriculture; cooperative organization, budget planning, community outreach and marketing strategies. Meat and milk production methods.
Name of Expected Volunteer: Bonnie Loghry, Master Public Health Bachelor of Science, Clinical Medicine Veterinary Technology Program	**Current Position of Volunteer:** Director and Coordinator *2010-Present* Public Health and Food Safety Certificate Program Yuba College Marysville, CA

Improving Small Ruminant Nutrition through Local Forage (Cassava hay and Silage) in the Southern Region of Mali
Assignment Number: MAL003A
Harouna Maiga, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, training of students, agricultural professionals (i.e. extension agent), and farm demonstration;* ***DRPIA /Ségou****; Agro-pastoral Schools in Ségou (ESAP-Ecole Secondaire Agro-pastorale = Agro-pastoral Secondary School; CAPS-Centre Agro-pastoral de Ségou = Agro-pastoral Center of Ségou)* and the Faculty of Agriculture and Veterinary Medicine (FAMA) of the University of Ségou

Beneficiary Organization: Farmer Cooperatives and Associations of Dougouba, Sakoiba, Ouendougou, Konodimini Extension agents, the Students of the University of Ségou and Students of ESAP and CAPS	**Location of Project:** Ségou and Sikasso Regions
Primary Contact: Mali: Bara Kassambara U.S. Coordinator: Judy Moses	**Date Project Started:** April 1, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** June 15-Jul 15, 2015
Brief background on beneficiary organization(s): Located at about 240 Km from the Capital city of Bamako, Ségou is the capital city of the 4th Administrative region of Mali with a population of 2,336,255 inhabitants over a surface area of about 64,821 km2 (around 5% of Mali). Ségou Region is divided into 7 Administrative divisions or districts encompassing 118 commune / municipalities and 2,166 villages. The main economic activities include agricultural, fishing and stockbreeding. The main change	**Objectives of the Assignment:** Training in cassava hay and silage production, handling, and storage; Community improved forage/cassava based small ruminant production and nutrition systems. ***Primary objectives:*** ***In Ségou areas*** • Provide advance Presentation on the use of cassava foliage hay and silage techniques. • Provide training in small ruminant nutrition with special emphasis on cassava nutrient composition and diet

to the sustainable agricultural development is how to triggering a rapid and efficient transition from old agricultural practices dominated by an extensive production method to more technical, entrepreneurial, market-driven production system to produce in quantity and in quality as well. In the villages of Dougouba, Sakoiba, Ouendougou and Konodimini, small holder farmers, organized into commodity associations are practicing subsistence crop and animal production system. The associations' members are involved in cash crops (cassava, cotton, peanut and rice) production besides the food crop (corn, millet, sorghum, groundnut, beans and cowpea). To meet the family expenses and agricultural production cost, they also grow some cattle and small ruminant to generate revenue. Most of the time, they use the services of Fulani people who care after their flocks while they themselves are busy with the field and family works. University of Ségou, the first provincial higher education institution in Mali was officially launched three years ago. It has two faculties (Departments): FAMA (Faculté d'Agronomie et de Medecine Animale = Faculty of Agriculture and Veterinary Medicine) and FASSO (Faculté des Sciences Sociales = Faculty of Social Sciences) and one Institute for Vocational Training (Institut Universitaire de Formation Professionnelle, IUFP). The university has the following main tasks: - Practical and specialized training; - Continuing education; - Development and distribution of knowledge However, the lack of sufficient permanent and skilled lecturers is hindering the university to fulfill these tasks The agro-pastoral schools in Ségou – ESAP (Ecole Secondaire Agropastorale = Agropastoral Secondary School) and CAPS (Centre Agropastoral de Ségou = Agropastoral Center of Ségou) are both private schools of technical and vocational education in agro-pastoralism. They offer a four-year training leading to the degree of Agricultural Technician diploma	formulation/balancing techniques. • Teach nutrients requirements of small ruminants (sheep and goats). • Teach sheep and goat's production cycle and the needs of protein an energy during production phases.

(Brevet de Technicien) at the forefront to assist students in acquiring the competencies needed to achieve employability. Courses are related to agricultural mechanics, animal and crop sciences. The schools wish to provide the best possible skills to the students as a way of making sure they are not only effective in doing their own agribusinesses but the services they provide are highly appreciated by farmers and their future employers. Despite the potential in terms of the seasonal (June-September) availability of hay, forage and some agricultural residues, the small ruminant production is lagging far behind the cattle because of the lack and excessive cost of animal feed throughout the dry season (December through May) along with the high incidences of disease and death of animal and genetically low-producing breeds. This situation has become more difficult when it comes to dealing with climate change and its consequences, the demographic pressure on forest and water resources and lack of sustained and environmental friendly, innovative technologies or practices. Among other issues we have the following: • Lack of appropriate trainings and experience in modern techniques of small ruminant husbandry; • Low production and productivity of small ruminants; • Lack of quality feeds; • Lack of grazing pastures / water and lack of good management of natural resources; • Lack of skills in small ruminant diet formulation and feed management; • Poor nutrition with imbalanced diets; • Poor animal health and diseases control;	
Tasks to be carried out: The main tasks of the expert are to enhance the technical capabilities of small holders to use small ruminant sustainable production and nutrition management to improve the production and productivity. The emphasis is to be placed on livestock feeding and production and /or reproduction. The specific tasks performed will be training in the following areas: • Evaluation of existing situations, problems and potentials of the current small ruminant farming and management practices. • Cassava production practices: varieties, soil fertility, nutrient needs, planting, diseases, etc.	

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Production and management practices of cassava forage: Hay and silage
Nutrients analysis (CP, DE, Fibers, and minerals) and composition of cassava forage, prussic acid (Hydrocyanic Acid).
Local Feeds and nutrients composition. Feeding management
Daily nutrient requirements of sheep and goats.
Diet formulation techniques and ration balancing using local feeds and cassava.
Nutritional diseases and management.

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<tr><td>Expected number of persons to be trained (m/f):
Four women cooperatives with about 40 F in total; 70 University Students with 10 F, 60 M; 80 Agro-pastoral Students with 20 F, 60 M and 2 Extension Agents</td><td>Required expertise of Volunteer:
Animal Scientist, PhD. The volunteer must be a specialist in small ruminant production (sheep and goats), and experienced with low resource communities. French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.</td></tr>
<tr><td>Name of Expected Volunteer:
Harouna Maiga , PhD</td><td>Current Position of Volunteer:
Professor of Animal Science
Department of Agriculture and Natural Resources
University of Minnesota Crookston campus
Crookston, MN 56716, USA</td></tr>
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Upgrading Small Ruminants Breeding Stock: Selection, Crossbreeding, and Purchasing Replacement Animals in the Southern Regions of Mali
Assignment Number: MAL003B
Harouna Maiga, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, training of farmers and students, agricultural professionals (i.e. extension agent), and farm demonstration;* ***DRPIA Sikasso/ Koulikoro;*** *SLPIA* Bougouni /Kangaba

Beneficiary Organization: Farmers, Farmer Cooperatives and Associations to be selected (i.e. Dladié/Koulikoro, Kiniele-Deguela/Kangaba, Bougouni/Sikasso), and area Extension agents.	**Location of Project:** Koulikoro and Sikasso Regions
Primary Contact: Mali: Bara Kassambara U.S. Coordinator: Judy Moses	**Date Project Started:** April 1, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** June 15 – August 17, 2015
Brief background on beneficiary organization(s): Dladié is a small village with an estimated population of 2,900 inhabitants situated about 15 km from Koulikoro. There is no running water, no electricity, and no telephone connection. The Farming Cooperative of Dladié, named "Jekafo Cooperative" meaning collective decision making, was created in 2008; its goal is to improve the social and economic conditions of Dladié village and the surrounding areas through the adoption of new varieties of crop and improved small ruminants production for both men and	**Objectives of the Assignment:** Community base managed small ruminant breeding program by selection, cross-breeding and genetic improvement. ***Primary objectives:*** ***In Koulikoro and Sikasso regions with selected villages*** • Provide training in small ruminants (goats & sheep) breeding and improvement programs. Participants will receive a goat or sheep breeding plan and method for improving production as a community. • Farmers and cooperatives will obtain knowledge to organize and manage a community based genetic improvement

women. The Cooperative includes about 40 members with a total of about 3,000 heads of small ruminants in the surrounding area. The cooperative members – both men and women are involved in individual goat farming. They are also involved in market gardening, which is mostly done by women. There is a mechanized (fuel powered) mill in the village used to mill grain into flour. This mill is run by women as well, although grain production is mainly done by men. The primary goal of Farmers' Cooperative of Dladié is to increase goat milk production through genetic improvement so that they can sustain their livelihoods using locally available resources. However, the implementation of an effective breeding scheme at village level is hindered by several factors including inappropriate record keeping, high illiteracy rate, poor infrastructure, limited research and extension services, inadequate funds (see Kosgey et al. 2006. Successes and failures of small ruminant breeding programs in the tropics: a review. Small Ruminant Research 61). Village breeding schemes, for instance buck rotation scheme, could be easily put in place at lower costs if farmers were well organized. Furthermore, evidence on the ground suggests that mixed crop-livestock producers need to be organized to form groups specialized in different components of the production value chain, instead of each farmer being involved in all the stages of production. Assistance is requested to address the following issues: participatory assessment of farmers' breeding goals for goat farming; practical information on breeding schemes; methods of implementation of breeding schemes at village level; and organizational issues at community level related to the implementation of a breeding scheme. The primary goal of keeping small ruminants in Kiniele-Deguela appears to be regular income generation followed by increased meat (improved growth rate) and manure production. However, because of the low level of productivity due to several technical	program (buck/rams circles). • Producers will learn and gain skills in goat's or sheep husbandry: Facilities & equipment, reproduction ad breeding, Health, kidding, lambing, feeds & feeding, marketing and production economics.

(genotype, feeding and animal health), institutional, environmental and infrastructural constraints, it is becoming difficult for many smallholders to achieve this goal through the indigenous sheep breed (West African Dwarf Breed) rearing. The farmer association of Kiniele-Deguela collectively holds around 1,000 heads of cattle and small ruminants and is engaged in individual animal production in parallel with crop production. Sheep herds are primarily open range grazing separately or with other livestock species depending on the availability of labor during the rainy season (June-September) and with little or no supplemental feeding throughout the dry season (December through May). The desired production traits (fast growth and good conformation) are hardly obtained due to uncontrolled mating, flock mobility and absence of breeding rams in many of the flocks. Small holder farmers from Bougouni and its surrounding villages of Toula, Mena Bougouda are practicing subsistence agricultural production system based on corn, millet, sorghum, groundnut and beans cropping systems. They also raise small ruminants with similar goals to farmers in Koulikoro regions.	

Tasks to be carried out:
The main tasks of the expert are to enhance the technical capabilities of small holders to use small ruminant sustainable breeding programs (genetics, selection, and crossbreeding) to improve the production and productivity.
The specific tasks to be performed will be training in the following areas:

- Visit of some goat breed improvement operations in Koulikoro and Sikasso regions, specifically: Dladié/Koulikoro, Kiniele-Deguela/Kangaba, Bougouni/Sikasso
- Participatory appraisal of goat breeding objectives - the traits that farmers want to improve
- Develop and provide training in a participatory manner to build capacity of participants in dairy goat and sheep breeding programs at village level, **emphasizing buck /rams breeding circles**
- Develop an elaborate breeding plan with participants that will be used by the community (buck breeding circles)
- Make pertinent Recommendations and Suggestions to implement a sustainable community-based genetic improvement program based on the social and economic situation of beneficiaries.

Expected number of persons to be trained (m/f): 4 cooperatives: approximately 15 F and 20 M	**Required expertise of Volunteer:** Animal Scientist, PhD. The volunteer must be a specialist in small ruminant production (sheep and

members each coop. for a total of about 60 F and 80 M participants; 5 agricultural support professionals; 2 students from University of Ségou:	goats), and experienced with low resource communities with: • at least five years' experience in small ruminant community-based breeding • program management in developing countries in the tropics, • Some experience in tropical dairy goat production employing locally available feed • resources (poor quality straws, cultivated/native fodder) management and housing of small ruminants cultivated /native fodders) management, housing of small ruminants, and • some awareness of use of revolving fund for community-based breeding programs would be an advantage • Skills in adult education in an international setting/overseas experience can be valuable. • French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.
Name of Expected Volunteer: Harouna Maiga , PhD	**Current Position of Volunteer:** Professor of Animal Science Department of Agriculture and Natural Resources University of Minnesota Crookston campus Crookston, MN 56716, USA

Improved Rangeland-Based Small Ruminant Production and Nutrition Systems in the Southern Region of Mali
Assignment Number: MAL004
Andrés F. Cibils, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agent;* ***DRPIA Sikasso/Segou;*** *SLPIA* Bougouni and the University of Segou

Beneficiary Organization: Farmer Cooperatives and Associations of Bougouni, Menabougou, Sola and Toula in Bougouni area and the Students of the University of Segou	**Location of Project:** Segou and Sikasso Regions
Primary Contact: Bara Kassambara (00223) 76 31 15 57	**Date Project Started:** August 1, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** August 1 – 18, 2015
Brief background on beneficiary organization(s): Bougouni is one of the seven administrative divisions of the Sikasso Region and located about 170 km south of Bamako. The administration division of Bougouni is composed of 26 subdivisions or communes with a total of 482 villages. The major economic activities remain crop production and livestock breeding. Small farmers from Bougouni and its surrounding villages are practicing subsistence agricultural production system. The members of farmer associations and cooperatives from the rural area of Bougouni and the villages of Toula, Mena Bougouda and Sola grow corn,	**Objectives of the Assignment:** Community improved rangeland-based small ruminant production and nutrition systems **Primary objectives:** **<u>Bougouni</u>** • Put in place an improved rangeland-based small ruminant production and nutrition system in the area of Bougouni • Develop efficient sustainable low cost and adaptable community managed small ruminant production system. • Develop production and milking plans using locally available resources year round. **<u>Segou</u>** • Provide advance presentation on the use

millet, sorghum, groundnut and beans during the rainy season for their family consumption. To meet family expenses and agricultural production costs, they grow cotton, cattle and small ruminants. Most of the time, they use the services of Fulani people who care after their flocks (mainly composed of cattle) while they themselves do the field work. Despite the potential in terms of the seasonal (June-September) availability of hay, forage and some agricultural residues, the small ruminant production is lagging far behind the cattle because of the lack and excessive cost of animal feed throughout the dry season (December through May) along with the high incidences of disease and death of animal and genetically low-producing breeds. This situation has become all the more difficult when it comes to dealing with climate change and its consequences, the demographic pressure on forest and water resources and lack of sustained and environmental friendly, innovative technologies or practices. Among other issues we have the following: • Lack of appropriate trainings and experience in modern techniques of animal husbandry • Low production and productivity • Lack of skills in small ruminant feed formulation and management • Economic strains affecting livestock markets • High pressure on the natural resources (tree leaves) for feeding small ruminants.	of cassava foliage in small ruminant nutrition.
Tasks to be carried out: The main tasks of the expert are to enhance the technical capabilities of small holders to use small ruminant sustainable production and nutrition management to improve the production and productivity. The emphasis is to be placed on livestock feeding and production and /or reproduction. The specific tasks performed will be: • Critically evaluate the existing situation, problems and potentials of small ruminant farming and management practices • Develop a plan for community based, sustainable, rangeland-based small ruminant production and nutrition system. • Provide training on local small ruminant production and management tools or practices for food security and for economic development purposes • Assess the quality of local and exotic forages such as **Gliricidia, Abizialebec and lessena** fodder trees in order to develop low-cost production and nutrition system that will be monitored by the volunteer to be able to keep providing additional support throughout the	

Project.

- Suggest appropriate measures for best management practices (BMPs), especially increasing productivity and providing affordable animal feeding system
- Discuss critical issues with genetic improvement of the local breed

Expected number of persons to be trained (m/f): Participants from 4 cooperatives: approximately 10 F and 20 M members each cooperative for a total of 40 F and 80 M participants Students from the University of Segou: approximately 15 F and 30 M. 20 agriculture support professionals: 4 F and 16 M.	**Required expertise of Volunteer:** Animal Scientist, PhD. The volunteer must be a specialist range management especially in regards to the needs of small ruminants, and experienced with low resource communities. French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.
Name of Expected Volunteer: Andrés F Cibils, PhD Professor of Rangeland Science	**Current Position of Volunteer:** Department of Animal and Range Sciences New Mexico State University Las Cruces, NM

Improving Small Ruminant Nutrition through Local Forage
Assignment Number: MAL005
Thierno Hady Diallo, MS

Host / Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* ***DRPIA / Sikasso***
Tienfala (Koulikoro region) and Bougouni (Sikasso region)

Beneficiary Organization: Breeders Cooperative of Tienfala and Bougouni. Students from Agro-pastoral school Segou	**Location of Project:** Koulikoro/ Sikasso Regions
Primary Contact: Mali: Bara Kassambara U.S.: Judith Moses	**Date Project Started: July 2015**
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** July 14, 2015 for 20 days.
Brief background on beneficiary organization(s): In Mali the farming system is agro-pastoral based on livestock and crop production. Small ruminants feeding systems are based on the following: Natural pasture, stall feeding, grazing with supplementation, permanent stall feeding, tethering, and the integration of livestock into agriculture production systems. Issues of feeding include: • Weak animal diseases control; • Lack of pastures, water and poor natural resources management; • Land ownership and management; • Socio-economic constraints and conflicts • Low herd production and productivity;	**Objectives of the Assignment:** 1. Assess hosts practices in small ruminant feeding and suggest appropriate ration formula according to the production objectives (reproduction, fattening, meat, milk); 2. Train hosts on improvement of available local Small Ruminant forages to increase digestibility; 3. Make affordable recommendations to increase animal feed availability. ***Primary objectives:*** • Assessment of natural resources (pasture, Agriculture by-products, tree forage) and supplements available locally; • Train the hosts on improvement of natural small ruminants feed (hay treatment, silage, chopping, haymaking, legume forage);

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- Recommend best practices in regards to soil preservation and improvement, forage management and intercropping of browse, trees and crops.
- Provide presentation on small ruminant nutrition at the Segou ag-pastoral school.

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Tasks to be carried out:
The expert should evaluate the hosts' knowledge, skills and practices concerning small ruminant production with focus on nutrition. Emphasis should also be put on best practices to enhance profitability.

The specific tasks performed will be:

- Assessment and SWOT analysis of hosts' (Tienfala, Bougouni) small ruminant raising techniques;
- Visit some small ruminant farms to better understand practices and suggest improvements;
- Provide hands-on training to hosts on improving digestibility of local forage and animal production;
- Propose techniques to increase and make available animal forage;
- Recommend appropriate best management practices (BMPs) for animal nutrition and related management.

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Expected number of persons to be trained (M/F):
Participants from 2 cooperatives: approximately 5 F and 20 M members each for a total of 10 F and 40 M participants.

Students from Segou Agro-pastoral school include 18 M and 2 F 4th year students, and 30 M and 10 F 3rd year students.

20 agriculture support professionals: 4 F and 16 M.

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Required expertise of Volunteer:
The volunteer must be a specialist in plant genetics, plant physiology, and soil science with the ability to transfer information to small farmers and the support professionals that serve them.

French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.

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Name of Expected Volunteer:
Thierno Hady Diallo
MS Agronomy, UW
Email: gamoufarms@gmail.com

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Current Position of Volunteer:
University of Wisconsin, Madison:
Department of Agronomy.
Senior Research Specialist

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</table>

Profit or Loss: Business Side of Supplementing Small Ruminants Grazing on Common Lands
Assignment Number: MAL006
Richard Otto Wiegand, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* ***DRPIA Koulikoro/ Sikasso;*** *SLPIA* Bougouni

Beneficiary Organizations: Farmer Cooperative of Dladie, Toula, Mafeya (Koulikoro), farmer association of Toula/Bougouni (Sikasso) and the Agro pastoral Training School (Sikasso city)	**Location of Project:** Regions of Koulikoro and Sikasso
Primary Contact: Mali: Bara Kassambara U.S.: Judith Moses	**Date Project Started:** August 1, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** Aug 1 – 19, 2015
Brief background on beneficiary organizations: Farmer Cooperative/Association of Dladie and Toula: The village of Dladie is located at about 15Km from the capital city of Koulikoro in the region of Koulikoro. Likewise, the village of Toula is located at about 15 Km from Bougouni urban center in the Region of Sikasso. Farming is the main economic activity for the both groups. The members from the cooperative of Dladie and from the Association of Toula are all farmers involved in an integrated, semi-extensive crop (cereals, fruits, vegetables and cotton) and livestock (Cattle, goats and sheep) production system.	**Objectives of the Assignment:** Support participants to set up a community-based and individual small ruminant business record keeping and management system to enable the beneficiaries to assess their business progress and make important economic decisions for increased competiveness. ***Primary objectives:*** • Develop small ruminant business management tools or modals adaptable to both community and individual needs • Train farmers and students on how to efficiently and effectively manage a small ruminant project or operation as a business with relevant tools • Provide recommendations on ways and means to improve their investment in the small ruminant value chain for increased production and productivity.

Unlike the crop production, animal production, especially goats and sheep, is challenging because of the lack of sustained technical support and a tradition in livestock husbandry. Despite the growing demand of the local and nearby urban populations for small ruminant products (meat and goat milk) and the existence of agricultural residues and forage during rainy season, the cooperative members as well as their financial partners are reluctant to invest in small ruminant business. They are concerned about the profitability or cost effectiveness of small ruminant project or business especially when it comes to supplemental feeding practices during the critical period of animal physical development and environmental stress of the dry season. They lack appropriate technical knowledge in developing and implementing appropriate tools or technologies to operate their individual small ruminant operations as a business. <u>Agro pastoral Training School:</u> As the first agricultural training center in Sikasso, the Agro-pastoral Training School of Wayerma (Ecole de Formation Agro-pastorale de Wayerma -*EFAPW*) was created (self-funded) in June 2005 under the Regional Directorate of Education. It is a private school of technical and vocational education in agro-pastoralism. It offers a 4-year middle training courses leading to the degree of Agricultural Technician (Brevet de Technicien) at the forefront to assist students in acquiring the competencies needed to achieve employability. The courses are related to agricultural mechanics and animal and crop sciences. Most of the 20 school teachers are agricultural professionals from government agencies and NGOs. The school management ambition to improve its animal science teaching by integrating small ruminant accounting and management tools to enable its graduates to undertake their own microenterprises and increase their employability as well. Issues include: • Lack of appropriate trainings and	

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<tr><td>experience in modern techniques of animal husbandry at farm level
• Lack of appropriate tools and attitude in small ruminant or livestock business management and development.
• Lack of financial reporting
• Economic strains affecting livestock markets
• High pressure on the natural resources (tree leaves) for feeding small ruminants.</td><td></td></tr>
<tr><td colspan="2">Tasks to be carried out:
The main tasks of the expert are to enhance the technical capabilities of farmers and students on livestock farm management and sustainable business practices. Emphasis is to be placed on good livestock or small ruminant business management practices. The specific tasks performed will be:
• Critically assess existing situations, problems and potentials of the current small ruminant farming and business management practices
• Provide training on local small ruminant business management for record keeping and financial reporting purposes
• Provide recommendation or perspectives on how to attract and secure the investment dealing with small ruminant production as a business
• Suggest appropriate measures for best management practices (BMPs), especially increasing productivity through optimal feed supplementation practices
• Discuss critical investment-related issues and handling risks.</td></tr>
<tr><td>Expected number of persons to be trained (M/F):
Participants from 4 cooperatives: approximately 10 F and 20 M members from each cooperative for a total of 40 F and 80 M.

30 agriculture support professionals: approximately 4 F and 26 M.
Sikasso Agro-pastoral school students: 35 M and 15 F students.</td><td>Required expertise of Volunteer:
The volunteer must be a specialist of agricultural and economic development with experience in the area of livestock and especially small ruminant production systems, management and marketing.

French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.</td></tr>
<tr><td>Name of Expected Volunteer:
Richard Otto Wiegand, PhD
Associate Professor of Extension with Tenure</td><td>Current Position of Volunteer:
Spooner Ag Research Station
University of Wisconsin Cooperative Extension, Spooner, WI</td></tr>
</table>

Facilitate the Intercropping of Legume Forage Trees on Small Farms and the Establishment of a Demonstration Site
Assignment Number: MAL007
Margaret Summerfield, PhD

Host/Partner: IER (Rural Economy Institute) Small Ruminant Program – Agro-forestry Unit*; SLPIA (Local Extension Service for Animal Production) and* Regional Agricultural Chamber of Koulikoro/Bougouni

Beneficiary Organization: Farmer Cooperatives and Associations of Dladie, Mafeya, Tanabougou and Katibougou (Koulikoro Region); Farmer Cooperatives and Associations of Bougouni, Toula, Sola, Finkolio Guanadougou, and/or Menabougouda	**Location of Project:** Koulikoro and Sikasso Regions
Primary Contact: Mali: Bara Kassambara U.S.: Judith Moses	**Date Project Started:** August 13th, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** August 13th – September 4th, 2015
Brief background on beneficiary organization(s): In both Koulikoro and Sikasso regions, subsistence is gained mainly from crops. Small ruminants are kept as insurance against crop failures and as a source of income. Sheep herds are primarily open range grazing separately or with other livestock species depending on the availability of labor during the rainy season (June-September) and with little or no supplemental feeding throughout the dry season (December through May). Issues include: • Lack of appropriate trainings and	**Objectives of the Assignment:** Community Implemented Small Ruminant Feeding Systems ***Primary objectives:*** • Put in place an efficient sustainable low cost community managed small ruminant feeding system • Facilitate the intercropping of legume forage trees among the 8 collaborating cooperatives • Establishment of a demonstration site consisting of 3 varieties of legume trees. • Inform members about modern grazing

<table>
<tr><td>experience in modern techniques of animal husbandry
• Low production and productivity
• Lack of skills in forage management
• High pressure on the natural resources (tree leaves) for feeding small ruminants.</td><td>practices (case of US) and how innovation and management is necessary to reduce the prevalence of animal malnutrition</td></tr>
<tr><td colspan="2">Tasks to be carried out:
The main tasks of the volunteer are to enhance the technical capabilities with livestock farm and sustainable feeding management. Emphasis is to be placed on livestock nutrition as improving genetics will not be helpful without proper nutrition. The specific tasks performed will be:
• Critically assess existing situations, problems and potentials of the current small ruminant farming and feeding management practices;
• Assess the regional or local Animal Production Unit (Koulikoro DRPIA and Bougouni SLPIA) and other technical staff and field workers involved in related areas;
• Confirm the daily agendas with hosts to correspond with appropriate tree planting activities of the community and/or region.
• Provide hands-on training on forage varieties, their potentials and how to better take care of them, especially the minimum requirements during the dry season
• Develop appropriate measures for best forage management practices especially to increase productivity of affordable animal feed.
• Facilitate the planting of 1,000 legume trees.
• Facilitate the establishment of a demonstration site at Finkolio Guandougou (80% F cooperative members) or other appropriate location.</td></tr>
<tr><td>Expected number of persons to be trained (m/f):
Participants from 8-9 cooperatives: approximately 10 F and 20 M members each cooperative for a total of about 80 F and 160 M participants.

16 agriculture support professionals: 4 F and 12 M.</td><td>Required expertise of Volunteer:
Expertise with forage plant’s and the relationship of plants to the environment and other living organisms with a specific focus on legume plants and grazing animals.

French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.</td></tr>
<tr><td>Name of Expected Volunteer:
Margaret Summerfield, PhD</td><td>Current Position of Volunteer:
Botanist
Retired Professor, Armand Hammer United World College</td></tr>
</table>

Improving Small Ruminant Farmers' Marketing Assessment from "Grass to Table"
Assignment Number: MAL008
Ashton McGinnis

Host / Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* ***DRPIA / Sikasso***
Assignment Sites: Tienfala, Dladiè / Mafeya (Koulikoro region) and Bougouni (Sikasso region)

Beneficiary Organization: Breeders Cooperative of Tienfala, Dladiè/Mafèya and Bougouni	**Location of Project:** Koulikoro / Sikasso Regions
Primary Contact: Mali: Bara Kassambara U.S. Coordinator: Judy Moses	**Date Project Started**: Apris, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** Approximately July 24-August 8, 2015
Brief background on beneficiary organization(s): The implementation of short cycle farming as a business (cash crops or small ruminant, poultry) could strongly help to reduce malnutrition and poverty. The small ruminant marketing assessment of the value chain will help to identify business opportunities from grass to table and contribute to stakeholders' livelihood improvement and economic growth. Specific information on the targeted villages include: Dladié is a small village with an estimated population of 2,900 inhabitants situated about 15 km from Koulikoro. There is no running water, no electricity, and no telephone connection. The Farming Cooperative of Dladié, named "Jekafo Cooperative" meaning collective decision making, was created in 2008; its goal is	**Objectives of the Assignment:** - Assess hosts practices in small ruminant marketing from grass to table, - Identify potential opportunities for improvement, - Make affordable recommendations to begin collaborative marketing; ***Primary objectives:*** • Assessment of Small Ruminant Value chain assessment in the project areas of Koulikoro and Bougouni; • Assess the hosts basic market knowledge and skills; • Assess final end marketing options including life animal markets, community supported agriculture options and restaurant sales. • Provide a plan for future training and implementation of collaborative marketing.

to improve the social and economic conditions of Dladié village and the surrounding areas through the adoption of new varieties of crop and improved small ruminants production for both men and women. The Cooperative includes about 40 members with a total of about 3,000 heads of small ruminants in the surrounding area. The cooperative members – both men and women are involved in individual goat farming. They are also involved in market gardening, which is mostly done by women. There is a mechanized (fuel powered) mill in the village used to mill grain into flour. This mill is run by women although grain production is done by men. The primary goal of Farmers' Cooperative of Dladié is to increase goat milk production through genetic improvement so that they can sustain their livelihoods using locally available resources. However, the implementation of an effective breeding scheme at village level is hindered by several factors including inappropriate record keeping, high illiteracy rate, poor infrastructure, limited research and extension services, inadequate funds (see Kosgey et al. 2006. Successes and failures of small ruminant breeding programs in the tropics: a review. Small Ruminant Research 61). Village breeding schemes, for instance buck rotation scheme, could be easily put in place at lower costs if farmers were well organized. Furthermore, evidence on the ground suggests that mixed crop-livestock producers need to be organized to form groups specialized in different components of the production value chain, instead of each farmer being involved in all the stages of production. Assistance is requested to address the following issues: participatory assessment of farmers' breeding goals for goat farming; practical information on breeding schemes; methods of implementation of breeding schemes at village level; and organizational issues at community level related to the implementation of a breeding scheme. The primary goal of keeping small ruminants in Kiniele-Deguela appears to be regular income generation followed by increased meat (improved growth rate) and manure production. However, because of the low level of productivity due to	

several technical (genotype, feeding and animal health), institutional, environmental and infrastructural constraints, it is becoming difficult for many smallholders to achieve this goal through the indigenous sheep breed (West African Dwarf Breed) rearing. The farmer association of Kiniele-Deguela collectively holds around 1,000 heads of cattle and small ruminants and is engaged in individual animal production in parallel with crop production. Sheep herds are primarily open range grazing separately or with other livestock species depending on the availability of labor during the rainy season (June-September) and with little or no supplemental feeding throughout the dry season (December through May). The desired production traits (fast growth and good conformation) are hardly obtained due to uncontrolled mating, flock mobility and absence of breeding rams in many of the flocks. Small holder farmers from Bougouni and its surrounding villages of Toula, Mena Bougouda are practicing subsistence agricultural production system based on corn, millet, sorghum, groundnut and beans cropping systems. They also raise small ruminants with similar goals to farmers in Koulikoro regions.	
Tasks to be carried out: The main task of the expert is to assess the marketing capabilities of small holders, identify technical assistance needs and to provide a plan for future marketing support and training. The expert should assess small ruminant (goat and sheep) subsector in the project area and also the hosts' knowledge, skills and practices concerning small ruminant marketing. The specific tasks performed will be: • Assessment of hosts' small ruminant marketing techniques; • Interview small ruminant farmers and agriculture professionals to better understand current knowledge and practices; • Identify specific needs and provide introductory training sessions; • Develop a marketing plan for future training and implementation including a summary SWOT.	
Expected number of persons to be trained (M/F): 3-4 cooperative in the area of Tienfala, Dladiè and Bougouni with 20 farmers from each for a total of 60-80 participants including 20 women. In addition 2-4 representatives of DRPIA / DRSV in Koulikoro and Sikasso will be interviewed and assessed.	**Required expertise of Volunteer:** The volunteer must be a specialist in marketing with solid knowledge in assessing current strengths, weaknesses and potential opportunities. French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.
Name of Expected Volunteer: Ashton McGinnis	**Current Position of Volunteer:** **AVI Systems**, AV Integrator, Eden Prairie, MN

Improving Small Ruminant Farmers' Marketing Assessment from "Grass to Table" Part 2: Viability of Dual Breeds for Meat and Milk Production
Assignment Number: MAL009
Judith Moses

Host / Partner: IER (Rural Economy Institute) Small Ruminant Program – *technical and scientific adaptability, and training of extension agents.* ***DRPIA / Sikasso***
Assignment Sites: Bamako, Katibougou, Dladiè (Koulikoro region) and Toula, Sola, Menabouguda

Beneficiary Organization: Farmer Cooperatives and Associations of Dladie, Mafeya, Tanabougou and Katibougou (Koulikoro Region); Farmer Cooperatives and Associations of Bougouni, Toula, Sola, Finkolio Guanadougou, and/or Menabougouda	**Location of Project:** Koulikoro / Sikasso Regions and Bamako
Primary Contact: Mali: Bara Kassambara U.S. Coordinator: Judy Moses	**Date Project Started**: April, 2015
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** Approximately August 16- September 4, 2015
Brief background on beneficiary organization(s): The host communities excel in growing crops but livestock production has not been a strength or a strong income generator. There is a reported interest in both meat and milk production as an added value product. The cooperative members have very little actual experience or knowledge of milk production or standards. There is minimal infrastructure to support this goal although the government has established milk collection stations. The best meat carcass are not from the best milk producers just as high milk producing ruminants tend to not have high yielding meat carcasses. Even with superior nutrition the high milk producers do not build a heavy meat carcass as their energy is focused on milk production. Dual breeds are not superior milk producers nor provide the best meat carcass but are able to produce adequately in both areas. The majority of the local goats do originate	**Objectives of the Assignment:** This project will assess the market potential for utilizing a dual breed goat for both meat and milk production. ***Primary objectives:*** • Evaluate the income potential of adding goat milk to meat production enterprises in the local market. • Assess local small business and family marketing opportunities for goat milk products; • Assess final end marketing options including government collection centers, kiosks, community supported agriculture, and restaurant sales options; • Make recommendations to hosts on potential, challenges, quality control, and implementation issues.

from dual breed genetics (appropriate for both meat and milk production) and adding a milk enterprise might be a source of additional income for some of the farmers. Strength: traditional cooking utilizing bone-in meat is highly tolerant of light weight, low meat yielding carcasses common to milk breeds. Weakness: 1) lack of infrastructure to distribute or store fresh milk; 2) preserved milk products such as cheese are not common to the culture. Milk production requires careful monitoring of nutritional needs. The most nutritious feed options must be directed towards lactating animals especially if the kids remain on the doe. The future of the flock is the breeding female. If she is expected to produce healthy kids regularly (twice a year is the community's expectation) substantial milking may not be feasible especially if expected to supply significant milk for human consumption. When nutrition is too low the month before and after kidding the does will not reach their genetic potential for milk production. They also will have a more rapid decline in milk production after kidding. The month before birth and the month after are the best times to stimulate milk production. After that the milk supply begins to decrease due to hormones no matter how producer supplements the diet. Assuming the doe is in good condition at breeding the producer has a set window of time (the month before birth and the month after) for milk production.	
Tasks to be carried out: • Evaluate if the expansion in to milk production for at least some of the producers may be a viable source of additional income. • Compare the additional value of milk production to solely focusing on meat production considering labor, start-up cost, genetic potential, market interest, infrastructure requirements, cultural acceptance among other factors. • Assess the marketing capabilities of small holders, identify technical assistance needs and provide a plan for future marketing support and training.	
Expected number of persons to be interviewed and assessed: 3-4 cooperative in the area of Tienfala, Dladiè and Bougouni with 20 farmers from each for a total of 60-80 participants including 20 women. In addition 2-4 representatives of DRPIA / DRSV in Koulikoro and Sikasso will be interviewed and assessed	**Required expertise of Volunteer:** The volunteer must be a specialist in marketing with solid knowledge in assessing current strengths, weaknesses and potential opportunities. French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.
Name of Expected Volunteer: Judith Moses, MS	**Current Position of Volunteer:** Small ruminant producer and U.S. nationwide value-added marketer

Selection and Use of Small Ruminants Breeding Stock to Upgrade Animal Production in F3P / Mali Intervention Areas
Assignment Number: MAL010
Terry A. Gipson, Ph.D.

Host / Partner: - Farmers' Cooperatives of **Koulikoro** (Dladiè, Mafèya, Tièguila, Tanabougou, Katibougou, Fèya and Koulikoro) and **Sikasso** (Farmers' Cooperatives of Bougouni) regions;
- IER (Rural Economy Institute) Small Ruminant Program;
- DRPIA Koulikoro & Sikasso / SLPIA Koulikoro & Bougouni
- SAFE Program & University of Ségou

Beneficiary Organization: Farmers' Cooperatives of Koulikoro and Sikasso regions involved in F3P/Mali implementation, Extension agents, and 2 Students of the University of Ségou	**Location of Project:** Koulikoro and Sikasso Regions
Primary Contact: Bara Kassambara **Skype** kassambara_bara	**Date Project Started:** March 2015
Telephone/Fax: Mali: 00223 76 31 15 57 (Bara) U.S.: 01 715 265 7637 (Judy)	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** February 09 – March 01, 2016
Brief background on beneficiary organization(s): Dladié is a small village with an estimated population of around 500 inhabitants situated about 15 km from Koulikoro. Dladiè Farmers' Cooperative, named "Jekafo" meaning collective decision making, was created in 2008. Its main goal is to improve the social and economic conditions of Dladié village and the surrounding areas through improving rural economic activities (cropping, breeding, NRM) for both men and women. The Cooperative includes about 40 members with a total of	**Objectives of the Assignment:** Community base managed small ruminant breeding program, either by selection or cross-breeding through genetic improvement. ***Primary objectives:*** ***In Koulikoro and Sikasso regions with selected villages*** • Provide training in small ruminants (sheep and goats) breeding and improvement programs. Participants will receive a SR breeding plan and method for improving production as a community. • Farmers and cooperatives will obtain knowledge to organize and manage a community based genetic improvement program.

about 3,000 heads of small ruminants in the surrounding area. The cooperative members – both men and women are involved in individual goat farming, some are also involved in market gardening, which is mostly done by women. There is a mechanized (fuel powered) mill in the village used to mill grain into flour. This mill is run by women as well, although grain production is mainly done by men. Regarding improvement of small ruminant raising, the implementation of an effective breeding scheme at village level is hindered by several factors including inappropriate record keeping, high illiteracy rate, poor infrastructure, limited research and extension services, inadequate funds, poor knowledge and skills in making business in small ruminants (see Kosgey et al. 2006). Village breeding schemes, for instance buck rotation scheme, could be easily put in place at lower costs if farmers were well organized. In August 2015, the F3P / Mali provided Technical Assistance to producers in each cooperative of the project on Sustainable sheep and goat farming, including: Improved Breeds, Health, Feeding/Nutrition, Housing and Herd Management. In addition, F3P/Mali provided Improved males **sheep (Bali-Bali)** and **goat (Moor)**, locally bought on markets to some cooperatives to start breeding program. Now, to add value to the ongoing breeding program and make more impact, request is made to address the following issues: **1-** Identification / selection of best breeds according to farming areas; **2-** Key criteria for a good breeding animal (male and female) to perform; **3-** Best methods / schemes for efficient and sustainable breeding process; **4-** Appropriate tools and best practices to succeed a breeding program; Small holder farmers from Koulikoro and Bougouni areas are also practicing subsistence agricultural production system based on corn,	• Producers will learn and gain skills in SR's husbandry: Facilities & equipment, reproduction and breeding, Health, kidding, feeds & feeding, marketing and production economics.

<table>
<tr><td>millet, sorghum, groundnut and beans cropping systems.</td><td></td></tr>
<tr><td colspan="2">Tasks to be carried out:
The main tasks of the expert are to enhance the technical capabilities of small holders of F3P areas to properly select and use small ruminant breeding stock to improve the production and productivity.

The specific tasks to be performed will be the followings:
• Visit of some small ruminant farms and markets in Bamako, Koulikoro and Bougouni to assess practices and opportunities;
• Conduct a quick survey to investigate the breeding objectives and selection criteria adopted by breeders to determine the factors that affect the breeders' decisions (subjective and objective criteria).
• Develop and provide training in a participatory manner to build capacity of participants in SR breeding programs at village level, emphasizing key points of intervention for success to be realized;
• Develop an elaborate breeding plan with participants that will be used by the community
• Make pertinent Recommendations and Suggestions to implement a sustainable community-based genetic improvement program based on the social and economic situation of beneficiaries.</td></tr>
<tr><td>Expected number of persons to be trained (m/f):

1. <u>In Dladiè:</u> 22 participants including 19 farmers from cooperatives members, 1 student of Ségou based in Koulikoro and 2 Extension agents from SLPIA Koulikoro;
2. <u>In Bougouni:</u> 25 attendees including 22 peoducers from cooperatives members, 1 student from University of Ségou based in Bougouni, 2 Extension agents from SLPIA of Bougouni, 1 representative of Local Chamber of Agriculture</td><td>Required expertise of Volunteer:
Animal Scientist, PhD. The volunteer must be a specialist in small ruminant (sheep and goats) production (Selection, Crossbreeding, Artificial Insemination) and experienced with low resource communities, and having:
• At least ten-year experience in small ruminant community-based breeding
• Appropriate farming and Breeding program management in developing countries in the tropics,
• Experience in tropical dairy Small Ruminant raising using locally available feed (Agricultural by-products, supplement, tree forage, Hay, Shrub, Wild fruits; …..)
• Skills in adult education /overseas experience will be very valuable.
• French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided by the F3P / Mali project to support in translation/interpretation and organization and facilitation during the assignment implementation</td></tr>
<tr><td>Name of Expected Volunteer:

Terry A. Gipson, Ph.D.
Cell: 405-615-9590
tgipson@langston.edu or
terry.gipson@gmail.com
Website: www2.luresext.edu</td><td>Current Position of Volunteer:

Goat Extension Leader / Agriculture Research & Cooperative Extension
Langston University 1-877-466-2231
P.O Box 1730 / Langston, OK 73050
Office: 405-466-6126</td></tr>
</table>

Capacity Building in Start-up Business Implementation and Management
Assignment Number: MAL011
Michael Scott Lowery

Host / Partner: Farmers' Cooperatives of **Koulikoro** (Dladiè, Mafèya, Tièguila, Tanabougou, Katibougou, Fèya and Koulikoro) and **Sikasso** (Farmers' Cooperatives of Bougouni) regions.
- SLACAER of Koulikoro, Regional Agricultural Chamber of Koulikoro, concerned Local authorities.

Beneficiary Organization: Farmers' Cooperatives of F3P in Koulikoro and Sikasso Regions	**Location of Project:** Koulikoro & Sikasso Regions
Primary Contact: Bara Kassambara Skype kassambara_bara	**Date Project Started: November 2015**
Telephone/Fax: Mali: (00223) 76 31 15 57 U.S.: 715 265 7637	**Type of Assignment:** Technical Assistance and community development
Email: Mali: kassambara_bara@yahoo.fr U.S.: jmoses@pacer.org	**Dates of Assignment:** November 20 - 30, 2015.
Brief background on beneficiary organization(s): All the villages involved in F3P project received training in key topics of small ruminant farming: Improved breed, Health, Feeding/Nutrition with the use of forage trees, and flock management. Now the cooperatives would like to make initiate a business by purchasing a tractor to farm more lands for grazing and to also grow more leguminous plants (peanuts, cowpea) and produce more forage for animal feeding. The tractor will do other activities (Straw bales, transport, threshing, and powering other equipment). An Islamic organization has provided a signed commitment to contribute half the cost of a tractor. Issues include: • Lack of knowledge and skills in business	**Objectives of the Assignment:** Capacity Building in Market Assessment, Business Plan development, Business Implementation, Management and Follow-up for sustainability. ***Primary objectives:*** • Assess targeted cooperatives knowledge and skills in Market assessment, Business Planning and management; • Train targeted cooperatives members in best practices in Business opportunity identification, Business Plan development and fundraising methods; • Train cooperatives members in best process of business implementation, management and follow-up; • Provide cooperatives' members with appropriate tools and methods for market assessment, business plan development, business implementation, management and follow-up.

opportunity identification (Market Assessment); • Lack of Business Plan drafting and poor knowledge and skills for accessing and managing loans	
Tasks to be carried out: The main objective of this assignment is to build capacity of Cooperatives members in Business opportunity assessment, develop an appropriate Business Plan and get funding for a start-up business. In addition, training cooperatives' members in business implementation, management and follow-up is requested. More importantly, providing cooperatives with appropriate tools of business management and follow-up. ***Specially, emphasis should be placed on Dladiè Cooperative's intention to purchase a Tractor and make business by providing services (Plowing, Transport, Threshing, Straw Baling) to Dladiè and the neighboring villages of Mafèya, Tanabougou, Fèya, Tièguila and Koulikoro as they have sourced the contribution of funds.*** The specific tasks performed will be: • Critically assess existing situations, problems and potentials of the current Tractor business in the targeted areas; • Develop a SWOT Analysis and a Business Plan regarding Dladiè's request to purchase a tractor and give them relevant advice prior to purchase proceedings; • Provide hands-on training to the cooperatives members on: Business Opportunity, SWOT Analysis, Business Plan development and Business management.	
Expected number of persons to be trained (M/F): 18 F and 18 M plus 2 professionals. This includes: **- 9 cooperatives:** approximately 2F and 2M members from each involved cooperative and this will stand for **36 Participants;** **- 2 Extension agents from SLACAER and Agricultural Chamber** of Koulikoro);	**Required expertise of Volunteer: (1)** The Expert Volunteer must be specialist in Market Assessment, Business Opportunity identification, Start-Up Business implementation, Management and Follow-up; experienced with low resource communities and expert in Marketing, Communication and handling. French language would be an asset but is not required as French is not spoken in the village area and a translator will be provided.
Name of Expected Volunteers: 1. Michael Scott Lowery mlowery1445@gmail.com (719) 650-1445 (cell)	**Current Position of the Volunteer:** Retired and independent consultant

Farmer-to-Farmer Program Standard Indicator Reporting Tables
Table 1: Volunteer and Assignment Data

																Number of Persons Trained			Number of Persons Directly Assisted			Number of Volunteer Recommendations Made					
Assignment (Trip) Number	Name	Sex	State of Residence	Occupation Category	Race/Ethnicity	Prior F2F Service	Number of Scopes of Work	Type of Volunteer Assistance	Type of Commodity Chain Activities	Country	Country F2F Project	Scope of Work Start Date	Scope of Work End Date	Number of Volunteer Days Completed	Value of Volunteer Time Leveraged on Assignment (U.S.$)	Estimated Value of Host Contribution (U.S.$)	Male	Female	Total	Male	Female	Total	Economic	Organizational	Environmental	Financial	Total	Host(s)
Fiscal Year	**2015**																											
	Scott Haskell	M	CA	E	W/N	Y	1	E	S	MALI	SG-06	6/8/2015	6/25/2015	18	$8,460	$555	68	91	159	68	91	159	2	4	0	0	6	Dladie, Mafeya, Tanabougou (Bakan Minsen Ton), Kat
	Bonnie Loghry	F	CA	E	W/N	Y	1	E	S	MALI	SG-06	6/8/2015	6/25/2015	18	$8,460	$3,162	68	91	159	68	91	159	2	3	1	0	6	Dladie, Mafeya, Tanabougou (Bakan Minsen Ton), Kat
	Harouna Maiga	M	MN	E	B/N	N	2	E	F	MALI	SG-06	6/24/2015	8/6/2015	44	$20,680	$217	260	151	411	292	180	472	5	2	2	0	9	Univ of Segou, Agi-Sup (2 Agro Pastoral Schools
	Ashton McGinnis	F	MN	P	W/N	N	1	E	M	MALI	SG-06	7/25/2015	8/9/2015	16	$7,520	$67	11	2	13	34	17	51	1	2	0	0	3	Dladie, Mafeya, Tanabougou (Bakan Minsen Ton), Kat
	Thierno Hady Diallo	M	WI	F	B/N	N	1	C	F	MALI	SG-06	8/1/2015	8/16/2015	16	$7,520	$675	91	29	120	99	31	130	1	1	2	0	4	Toula, Benkadi, Sola, Tienfala (Counka fa ton), M
	Andres Cibils	M	NM	E	W/N	Y	1	E	F	MALI	SG-06	8/1/2015	8/19/2015	19	$8,930	$358	59	10	69	63	10	73	3	1	0	0	4	Bougouni, Toula, Tanabougou (Bakan Minsen To
	Richard Wiegand	M	WI	E	W/N	Y	1	O	F	MALI	SG-06	8/1/2015	8/19/2015	19	$8,930	$45	85	79	164	87	79	166	2	3	0	0	5	Dladie, Benkadi, Bougouni, Toula
	Margaret Summerfield	F	TX	T	O	N	1	C	F	MALI	SG-06	8/13/2015	9/3/2015	22	$10,340	$610	56	10	66	117	85	202	1	1	3	0	5	Bougouni, Dladie, Mafeya, Tanabougou (Bakan M
	Judith Moses	F	WI	F	O	Y	1	E	M	MALI	SG-06	8/10/2015	9/3/2015	25	$11,750	$55	95	81	176	150	89	239	1	2	0	0	3	Bougouni, Dladie, Mafeya, Tanabougou (Bakan M
	Michael Lowery	M	CO	E	W/N	Y	1	E	F	MALI	SG-06	11/20/2015	12/2/2015	13	$6,110	$3,195	33	34	67	33	34	67	5	1	0	1	7	oral Schools of Segou), Dladie, Tienfala (Counka f
Fiscal Year	**2016**																											
	Terry Gipson	M	OK	E	W/N	Y	1	E	F	MALI	SG-06	2/9/2016	3/1/2016	22	$10,340	$4,275	152	55	207	152	55	207	3	2	0	0	5	f Segou), Bougouni, Sola, CAA Samanko, Dladi, T
	BGGC TOTAL	**11**	**11**	**11**	**11**	**11**	**12**	**11**	**11**					**232**	**$ 109,040**	**$ 13,214**	**978**	**633**	**1,611**	**1,163**	**762**	**1,925**	**26**	**22**	**8**	**1**	**57**	

Farmer-to-Farmer Program Standard Indicator Reporting Tables
Table 2: Host Data (Baseline)

						Potential Beneficiaries					Economic Indicators			Environmental Indicator	Financial Services Indicators		Organizational Indicator
Host	Country	Country F2F Project	Date of Baseline Assessment	Host Gender	Institution Type	Members/Owners	Employees	Clients & Suppliers	Family Members	Total	Area of Potential Production Influence (ha)	Annual Gross Sales (Revenue) (US$)	Annual Net Income (US$)	Area Potentially under Improved Environmental/ Natural Resource Management (ha)	Annual Value of Rural/ Agricultural Lending (US$)	Number of Rural/ Agricultural Loans Issued Annually	ODI Rating
Fiscal Year																	
Dladie	Mali	SG-06	4/7/2015	J	C	22	-	1	66	89							
Mafeya	Mali	SG-06	4/7/2015	J	C	40	-	1	120	161							
Tanabougou (Bakan Minsen Ton)	Mali	SG-06	4/7/2015	J	C	29	-	1	87	117							
Katibougou	Mali	SG-06	4/7/2015	J	C	20	-	1	60	81							
Kalaban Coura Coops	Mali	SG-06	4/15/2015	J	C	15	-	2	45	62							
Tienfala (Counka Fa Ton)	Mali	SG-06	4/15/2015	J	C	20	-	1	60	81							
Univ of Segou	Mali	SG-06	5/2/2015	N/A	E	57	-	10	171	238							
Agi-Sup (2 ag schools of Segou)	Mali	SG-06	5/8/2015	N/A	E	159	-	14	477	650							
Ouendebougou	Mali	SG-06	5/16/2015	M	C	23	-	1	69	93							
Sola	Mali	SG-06	6/3/2015	M	C	12	-	3	36	51							
Bougouni	Mali	SG-06	6/3/2015	M	C	31	-	6	93	130							
Mena	Mali	SG-06	6/20/2015	M	C	31	-	2	93	126							
Toula	Mali	SG-06	6/20/2015	M	C	16	-	2	48	66							
Benkadi	Mali	SG-06	6/20/2015	M	C	18	-	2	54	74							
Dioro	Mali	SG-06	8/14/2015	F	C	44	-	4	132	180							
CAA Samanko	Mali	SG-06	9/14/2015	M	C	33		2	99	134							
Count:			**Total:**			**208**		**22**	**624**	**854**							

Farmer-to-Farmer Program Standard Indicator Reporting Tables
Table 3: Host Data (Outcomes/Impacts)

							Actual Beneficiaries			Economic Impacts		Environmental Impacts	Financial Services Impacts		Organizational Impacts		Number of Volunteer Recommendations Made				Number of Volunteer Recommendations Adopted				
Host	Country	Country F2F Project	Date of Impact Assessment	Host Gender	Institution Type	Members/Owners	Employees	Clients & Suppliers	Family Members	Total	Area under Improved Production Technology (ha)	Annual Gross Sales (Revenue) (US$)	Annual Net Income (US$)	Area under Improved Environmental/ Natural Resource Management (ha)	Annual Value of Rural/ Agricultural Lending (US$)	Number of Rural/ Agricultural Loans Issued Annually	ODI Rating	Number of New or Improved Products and/or Services	Value of Resources Mobilized by Host (US$)	Economic	Organizational	Environmental	Financial	Total	Economic	Organizational	Environmental	Financial	Total
Fiscal Year																												

Farmer-to-Farmer Program Standard Indicator Reporting Tables

Table 4: Outreach and Leverage

Implementing Partner Name	Fiscal Year	Number of Press Releases	Number of Media Events	Number of Group Presentations	Total Number of Outreach Activities	Value of Resources Leveraged by Grantee and Volunteers in the U.S. (U.S.$)
BGGC	FY2015	0	34	3	37	$ 80,859
BGGC	FY2016	1	108	11	120	$ 30,667
total		1	142	14	157	$ 111,526