



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Mali and Ghana 12-17 March and 28 March-4 April 2010

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Purpose of Trip: To assess the initiation of the 'Improving soil quality and crop productivity through CAPS in West Africa' (LTRA-8) project led by PI Vara Prasad, meet host country teams and their partners, learn about the implementation contexts, initiate the technology networks and gendered knowledge Cross-Cutting Research Activities (CCRAs), build gender awareness among the local site teams, and develop linkages with USAID Missions.

Sites Visited:

- Mali - The IER Research Station at Cinzana, the villages of Fambougou and Bouawaré, and the USAID/AEG office in Bamako (with Christie);
- Ghana - The SARI Research Station at Wa, the village of New Nyoli, SARI Headquarters and UDS in Tamale, and the USAID/EGO office in Accra (only Moore)
- Senegal - The USAID/EGO office in Dakar (only Moore)

Description of Activities

Mali: Moore and Christie joined Mamadou Doumbia and his *Institut de Economic Rurale* (IER) team for a coordination meeting at Cinzana research station. They discussed their plans for setting up their biophysical research across four regions with two sites in each region. Much of our time together focused on the SANREM Cross-Cutting research activities. On the first full day in Cinzana, Dr. Moore presented an overview of Phase IV of the SANREM CRSP. All the Malian researchers stressed the extreme challenge presented by Principal Two: permanent vegetative cover (whether cover crop or crop residues). Dr. Moore introduced the concept of technology networks and the need for community and agricultural service sector support if conservation agriculture was to take hold in Mali. Dr. Christie presented the gender priorities of the SANREM CRSP as a USAID project. She then introduced the village level focus group exercises designed to better understand their gendered knowledge, beliefs, perceptions and practices and to identify network partners that provide access to the wide range of resources needed to conduct agricultural production by both men and women. The

IER team noted recent changes in gender relations and roles, where 9 years ago women were not allowed under the roof of the meeting (“hangar”), and now women begin to have some money and access to loans and are more empowered.

Given that Monday was market day, we conducted the full focus group activity with men’s and women’s groups in the village of Fambougou on Sunday (13 men, 22 women). Women were two hours late the first day because “they were cooking and doing housework.” Better communication is required to hold meetings at times women can attend; the fact that our group waited for the women to join us before starting sent a message about our project valuing women’s contributions. Interactions with local villagers were coordinated and often lead by Cinzana station manager, Samba Traoré. The exercises went well producing the type of information needed and building an understanding of the differences in perspective between men and women concerning the production processes in the village. A list of agriculture service sector network partners was identified, including the village head, vendors in the weekly market, as well as in small shops in town, pesticide vendors were particularly singled out, extension agents, IER agents, and local NGO agents, as well as the village peasant association, women’s organization, youth organization, a seed cooperative, and development personnel on the Commune Council. Women added resources linked to the reproductive sphere (soap making, improved stoves, enriched flour for the children), all accessed through NGOs. The short amount of time allotted to this activity in break out groups (one men’s, one women’s) resulted in a bias against women’s participation, given the much lower levels of literacy among the women; basic education skills are lacking and constitute serious gender-based constraints for our project.

Particularly interesting was the finding of a distinct perceptual difference between men and women concerning how they evaluated the quality of a soil. Presented with pictures of different soils and with two tupperware boxes of local soils, women identified the ‘best’ soils with respect to how they performed in the ecology (i.e., with respect to what they produced, particularly distinguishing their two local soils in terms of whether they were millet or sorghum soils; they also judged the photo with the fruit tree to have the best soil. On the other hand, men differentiated soils on the basis of how easy or difficult they were to work under slight rain or heavy rain conditions. It is proved valuable to have a soil expert to share his knowledge with the farmers after this exercise and explain scientifically the differences in soil characteristics.

There was an interesting and lively discussion about what constitute productive, reproductive and leisure activities: one farmer says you can also do productive activities in the home. Herding is often a paid productive activity as the Peul herders are hired to manage their livestock; one man said that it is a productive activity because if you do not do it yourself you have to pay someone else to do it, whereas tending livestock around the homestead is not (is this gendered differentiation?) The group also discussed how food preparation is in the productive sphere if you buy the ingredients at the market. Leisure activities are available to women who sell at the market and can pay to have tea with other merchants, while men’s leisure includes playing soccer and resting in the shade. The use of the timeline elicited discussion on changing gender roles as a result of animal traction (women used to work all day on men’s fields and in the night on their own). The introduction of animal traction produced a clear shift in the gender allocation of tasks - women now had more time to take food to the men, but have to go farther out to collect wood for fuel as the size of fields increased pushing the village frontiers out into the bush. Consensus on this technology allowing more efficiency (“what used to take one month by hand takes a day now with animals”) even though this has increased soil degradation). These villagers say that controlling animals “is not a problem”, and that the problems are: 1) shortage of water, 2) more pests, and 3) poorer soils. They also mention “too many people.”

On Monday, we only conducted village activities in the morning. Again there are no women awaiting us; there are 10 men sitting with the chief; women are drawing water from the well close by. Eventually, we end up with 17 women and 22 men. The visit involved introducing the project to the Bouawaré village head and men and women of the village and learning about how they went about farming. Again, farmers stressed the important changes animal traction brought to farming; gender is discussed in this context as women say that before men and women used to work together and now men work ever larger plots of land and women have to work further out. Another change is the wells are deeper, although access has been facilitated with the introduction of a pulley for the rope. The women point out how hard they have to work to get the water and ask for help with another well that is not so deep. Their diet, they say, has not changed. There was a reported gender difference in fertilizer perceptions: men say women don't want to apply it because they don't see the positive impact, whereas women say they don't apply it because they don't have money for it. Women use their money for petty commerce and for fattening animals. Women also use compost from the house on far away fields using men's carts. Important to note that in this village, we did not hold a separate group discussion with the men and the women (though men sat on one side and women on the other) but that women did participate when encouraged, but that they consulted among themselves before speaking. The Bouawaré village head was quite clear that maintaining permanent vegetative cover was 'impossible'. In Bouawaré they showed us their various composting pits (both raised with bricks, and in the ground, one even out in a distant field). Nine women and 8 men accompanied us to the field in the pickup.

In the afternoon, we returned to Cinzana station to discuss our findings, discuss preparations for the baseline surveys, and identify options for the introduction of groundcover in this difficult environment. One idea involved having women test various groundcover crops in their group vegetable gardens, focusing on the importance of women having fodder available to feed their small ruminants. Technology network and gendered knowledge questionnaire items for inclusion in the baseline survey were provided on Wednesday. When leaving Cinzana, Penda Sissoko, Moore and Christie visited the offices of their NGO partner, PRECAD, led by Salif Kanté.

On Tuesday, Mamadou Doumbia, Penda Sissoko, Maria Elisa Christie and Keith Moore returned to Bamako, where (with the exception of Sissoko) they held an exit meeting with USAID/AEG/Mali Program Leader Jean Harmon. Jean was appreciative of our work and noted how SANREM was an important source for learning about how small farmers can adapt to climate change. She stressed the importance of gender equity to USAID and said that if two host country students are to be funded by this project, "one better be a woman." We were invited to the partners' conference to be held in late June 2010.

Ghana: Moore was picked up in Tamale by Jesse Naab and driven to Wa (about 6 hours by paved road) to meet with the Savannah Agricultural Research Institute (SARI) team working on the LTRA-8 SANREM CRSP project. On the first full day at the research station in Wa, Dr. Moore presented an overview of Phase IV of the SANREM CRSP and the gender priorities of the SANREM CRSP as a USAID project. He then introduced the concept of technology networks and the need for community and agricultural service sector support if conservation agriculture was to take hold in Mali and went on to describe the research on gendered knowledge, beliefs, perceptions and practices. Dr. Moore confronted the issue that there were no women on the team and admonished them to do their best to obtain input from a woman for their community level research and outreach efforts. Dr. Naab noted serious difficulties in recruiting and maintaining women on their team in this relatively isolated region. Both he, Shaibu Seini (SARI crop protection specialist) and Lassia Tuolo agents

(Issa, Marshall and Kassim) expressed clear willingness to work with women's groups and pointed out that they did have a literate woman leader on whom they relied in at least one village. Dr. Moore then introduced the village level focus group exercises designed to better understand agricultural resource access and allocation, agriculture service support networks and gendered knowledge. They discussed how best to scale down an introductory version of the focus group exercise given the time constraints on the following day. This scaled back version included a full-group discussion of resources used in agricultural production and of the timeline of changes in agricultural production. The two focus group activities involved the resource maps and the soils perceptions activity. This would provide sufficient basis for them to adapt the process for other target villages. It was noted that they planned to work in 20 villages. Despite the team's 'can-do' attitude, this was considered a lot given the complexity of developing conservation agriculture production systems (CAPS).

Naab and Moore also discussed internet connectivity issues, given the poor connectivity available in Wa. Dr. Naab uses his telephone line to link into his internet provider. This is unreliable for large downloads and he expressed frustration with the on-line (Scholar) basis for SANREM accounts reporting. Another researcher uses a cellular modem, but has had difficulty downloading an email message with attachment for the past 5 days. While internet connectivity is likely to improve over the course of the project, FedEx may be the most reliable method for submitting invoices and their back-up receipts. Naab also noted that since he is the Director of the Wa Center, his immediate superior is based in Tamale requiring a two-day return trip (assuming he can be found in his office). The routine of use of scanners and email attachments has not yet been established by SARI. Perhaps submitting invoices electronically in Tamale may be an option, although Naab has no office there. Given the time and distance, reporting will likely be irregular.

Traditional agricultural production in the Upper West Region has involved hill/mound-based field practices. These have some conservation agriculture components and may provide a basis for adapting to conservation agriculture practices. However, they are very labor intensive. It was suggested that it may be worthwhile following up on the Sasakawa Global 2000 Conservation Agriculture project conducted a decade ago by the Crops Research Institute in central Ghana.

The next day we visited the village of New Nyoli for the focus group exercises. Idrissou Yahaya (SARI agricultural economist) returned from Kumasi overnight and joined us for the day. The village teacher (who was absent) is the leader of the village farmers' organization. Everyone was waiting for us when we arrived. Despite efforts to focus the village men (6) and women (11) on identifying resources mobilized in agricultural production, respondents persistently included a list of resource desires. This indicates that although we repeatedly explained the research nature of the project, they addressed the team as if it were a development project that would furnish improved resources. They said that our NGO partner, Lassia Tuolo, was the primary, perhaps only, provider of new information and technologies in the recent past. The most important of these was the organization of a credit group. Lassia Tuolo initiated this organization linking it with a local credit institution. The NGO does not guarantee their loans, that is done by self-policing within the group. It will take time and frequent interaction to develop the open and creative relationships necessary for developing viable conservation agricultural practices and transforming them into a system. In any case, we have an inclusive list of resource providers for the baseline survey that should capture the actual extent of resource use (including tractors).

The mapping exercise did not go as planned either – more training in the expectations of project activities will be needed. With respect to village resource maps, they need to see some and have more time to develop them. Their approach was to repeat the listing format of the original resource

list while identifying resources with places and people through drawings. Perhaps they were somewhat at a loss without their teacher-leader. Nevertheless, they did enjoy making and hearing the presentations by the women and by the men of their resource 'maps'.

The Timeline exercise elicited some interesting responses. Beginning with a description by the oldest among them about how farming had been done in the past. Extensive labor (in teams) was involved. The coming of the tractors with a cotton project (some 30 years ago) changed this at least for a while. Tractors are still evident in the landscape and perhaps one or two village farmers have one, but the extent of their use is not clear. Labor can be reduced, more land seeded, and with population growth they explained that more fields had to be opened up at a greater distance from the village. It is not clear that the net benefits have changed. Their explanation for why yields had decreased was that they were not allowing each field sufficient time to recover. The use of inorganic fertilizer, a monetary expense, is minimal (for a cash crop) although manure is used on some fields. Animal traction was introduced by an agricultural project ten years ago, but when the bullocks which also had to be introduced were stolen they gave up on this technology. Hired labor cost more now than in the past. And the men explained how they had to hire teams of women from a neighboring village to get certain tasks accomplished.

Soil quality knowledge and perceptions were quite consistent across men and women. Both use a sight to determine soil quality, darker soils being considered better. In the picture exercise, men and women had different rankings, except for the lightest coloured soil which ranked last for both, and the recently plowed field with incorporated vegetative matter, second. The women preferred the darkest soil, while the men preferred the crop rows with residues, trees, and animals that would provide manure droppings. When good and bad soil samples taken from their fields were presented to both the men and women they rarely touched the soils to feel their texture, rather each individual immediately selected by sight the darker soil. When asked why this soil was better, they spoke of its colour and that it held together better in small balls, unlike the sand.

We discussed the implications of our experience for the upcoming baseline survey at the SARI office. I went over the baseline survey that Yahaya had drafted. Moore was favorably impressed with the draft and felt that our cross-cutting questions will not conflict with the other qualitative questions proposed. Moore was not able to see the attachments (not yet downloaded) from Dalton, but noted a couple of issues in formulation and questioned the justification for the last questions on self-identity as a farmer. In principle the last questions are decent enough, but it wasn't clear how they would be used in the analysis. Moore stressed the importance of sex-disaggregated data and suggested how the questionnaire could be divided into two, one for the household head and one for his spouse. This would allow for documenting perspectives from both men and women. Technology network and gendered knowledge questionnaire items for inclusion in the baseline survey were provided on a flash drive.

Naab and Moore discussed the overall project approach and Moore was surprised to realize that in response to the EEP review they had removed the Farmer Field School (FFS) modality in favor of the mother with babies design. While the mother with babies design makes sense it doesn't preclude using the FFS modality with the babies. We also discussed whether beginning with 200 farmers wasn't spreading the project too thinly. Given the complexity and need for in-depth research to identify viable systems, fewer would likely be better so that local synergies could be enhanced. These are all questions the team will need to consider in the next month as they set up their trials and the baseline survey.

On returning to Tamale Naab and Moore met with Dr. S.K. Nutsugah, SARI Director and reported that the project was beginning well. We discussed connectivity issues in Wa. He said that he was aware of the problem and that they would be addressing the matter. We also discussed the difficulties in recruiting women scientists. We also visited with S.M. Kuu-ire, Acting Registrar at the University of Development Studies (UDS). They currently have some 15,000 students enrolled, 6,000 of them in Wa. They are currently in a building phase and have nice facilities only recently opened. He volunteered an issue with respect to his faculty; he needs to get faculty to stay longer in their offices. It is not appropriate for young women to seek out advice from faculty at their homes, another constraint on the recruitment of women into the sciences.

Back in Accra, Moore met with Brian Dusza, Director, Ghana/EGO, Belien Tadesse, and Pearl Coleman Ackah at the USAID offices. Moore presented the SANREM program and how conservation agriculture research was our response to the need for climate change adaptation for small holders. In this regard, integrated nutrient management building on local networking of service providers would play a key role. Moore went on to describe the progress being made in establishing the research sites in Wa. They were favorably impressed and expressed a strong desire to link the project with their new food security initiative in Tamale. The Ghana/EGO team also wanted to participate in any restitution of the baseline survey after it was completed and analyzed.

Senegal: Moore met with Peter Trenchard, Director, Senegal/EGO/USAID. Moore presented the new SANREM CRSP program (both global and for West Africa) and his mission to the West Africa research sites in Mali and Ghana. He described how the program had evolved in Phase IV to focus on conservation agriculture research developing adaptive alternatives in response to climate change. Trenchard told of how EGO programs were shifting to agriculture focus and that USAID thinking was recognizing the importance of long-term training. He mentioned that both Senegalese research and higher education were strongly focusing on the need to address food security in the agricultural sector, but coordination and faculty commitment to applied research needed to be developed.

Training Activities Conducted:

Program type (workshop, seminar, field day, short course, etc.)	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		
Focus Group	14 March 20 10	Men and women villagers in Fambougou	13	22	SANREM ME in collaboration with IER researchers and PRECAD agent	Introduce and investigate the concepts of conservation agriculture , technology networks, and gendered knowledge and practices.
Focus Group	15 March 20 10	Men and women villagers in Bouaware	22	17	SANREM ME in collaboration with IER researchers and PRECAD agent	Introduce and investigate the concepts of conservation agriculture , technology networks, and gendered knowledge and practices.
Focus Group	30 March 20 10	Men and women villagers in New Nyoli	6	11	SANREM ME in collaboration with SARI researchers and Lassia Tuolo agents	Introduce and investigate the concepts of conservation agriculture , technology networks, and gendered knowledge and practices.

Suggestions and Recommendations:

In the Malian villages we learned that the women are not well educated, making training activities more difficult to conduct than with the men. More time will be needed to convey the same information. In the Ghanaian village, more extensive interaction will also be needed to develop innovation teams (both men and women) at the village level. Perhaps specially trained trainers for women could help facilitate these communications, as would literacy training for women. In any case, it is clear that more and dynamic women are needed to animate women's groups.

The Peace Corps is building collaborative bridges with USAID development activities in both Ghana and Mali. One option may be to ask Peace Corps in each country to provide a woman agricultural volunteer to work in the villages with the project. Such a request must come from the host country partner. Given the upcoming expansion of Peace Corps in both countries, there is a strong possibility that this would be possible.

It is good that the baseline surveys will be implemented soon. These plans should include questionnaires designated for both the household head and his spouse (of course, where only one spouse remains, only that one should be interviewed). Each team has been provided with questionnaire items for the technology networks and gendered knowledge cross-cutting activities. These should be integrated into the questionnaires as appropriate.

It is important to stress that the SANREM CRSP technical focus on conservation agriculture emphasizes our prioritization of climate change adaptation research for smallholders. This research addresses food insecurity, not simply as an immediate issue, but with respect to the long-term adaptations that will enhance sustainable smallholder capacities.

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