



Trip Report

Project: Sustainable Management of Watersheds: The River Njoro, Kenya (SUMAWA)

Travelers Scott N. Miller

Location (s): Kenya

Dates of Travel: Nov 13 – Nov 19 , 2004

Purpose of Trip: Project review, meet with GL-CRSP leadership

1. Summary of Travel Itinerary

- a. Nov. 13 – Travel from Laramie, WY to Nairobi (arrive Nov. 14)
- b. Nov 14-15, Nairobi
- c. Nov 16-18, Njoro (Egerton University)
- d. Nov 18 – Travel from Nairobi to Laramie, WY (arrive Nov. 19)

2. Objectives

- Project reorganization to improve pace of activities and quality of output
- Review project progress to date and current state of activities

3. Summary of Primary Activities and outcomes

- **Nov. 14, 15.** Meetings with Dr. Tag Demment (Director, GL-CRSP), Ms. Susan Johnson (Project Administrator, GL-CRSP), and Mrs. P.B. Allen (SUMAWA financial consultant). The primary purpose of these meetings was to coordinate the message that was to be delivered to the SUMAWA team and ensure that effective changes to the project would be put in place. I delivered the SUMAWA Final Report to Demment and Johnson so that they would have a basis for interpreting research progress.
- **Background:** Dr. Mimi Jenkin (co-PI, SUMAWA) and I previously met with Demment and Johnson at UC-Davis in September, 2004 to review the SUMAWA project and create a structured plan for improving functional capacity in Kenya. A memo resulted from that meeting which was delivered to the SUMAWA team in order to clearly express the need for project restructuring and the addition of a program manager / coordinator to help with management in Kenya. The memo is included as Appendix I.
- A proposed Powerpoint presentation was created in Nairobi to deliver two messages: that of the ME with respect to project outcomes and timeliness, and that of the Lead PI with respect to the practical changes required to improve the project.
- **Nov 16:** Travel to Egerton University, Njoro. I was scheduled to meet with Drs. Shivoga and Gichaba but we were delayed in our arrival and was unable to meet with them. Held an informal meeting with Demment, Johnson and Akula to discuss the planning for the visit. It



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was decided that the Powerpoint presentation would be scrapped and a consultative/collaborative meeting would be substituted in its place.

- **Nov. 17:** All-day meeting with the SUMAWA team.
 - In the morning Demment, Johnson & Miller met with the Kenya Lead and co-PIs (Shivoga, Maina Gichaba, Ouma, Lelo, and Mucai). Akula also attended this meeting. Demment delivered a briefing on expectations of the ME with respect to the project. Demment expressed strong support for the project and long-term commitment. Reiterated interest in developing a Center of Excellence and impressed upon the group that a high level of function was necessary to achieve this goal. Reviewed the challenges facing this project, namely that it is multidisciplinary, multi-institutional, multi-cultural, and faces limited physical and intellectual capacity.
 - Co-PI meeting was opened for discussion with respect to perceived issues with the project and identifiable solutions. These included:
 - Student management and their lack of progression. This was addressed in some detail this summer with a meeting of the co-PIs. The memo from this meeting and list of solutions is attached as Appendix II. Johnson expressed the need to have a structured program of assessment in place to monitor & track students.
 - Shivoga identified lack of capacity in management and research as a limiting factor. Also discussed the need for monthly meetings. This has been brought up in the past, and Kenya co-PIs are obligated to attend these meetings. As stipulated in the terms of reference for a co-PI, "*Project management. Attend monthly project management meetings. At these meetings each co-PI will provide a short, formal briefing on progress for research for which he/she is responsible. Effort should be made to schedule these meetings at a time convenient for US PIs to participate via conference call. Also responsible for developing the short-and long-term research agenda, including the formulation of RAPs for which he/she is responsible.*"
 - Miller identified the need to have clear tasks and outcomes arise from co-PI meetings to ensure that progress is maintained.
 - Lelo stated that momentum is sinusoidal in due in part to the lack of continuity between meetings; i.e. revisiting the same ground repeatedly. In fact, this memo illustrates several examples of this behavior, and it is recognized as a key limiting factor in improved function.
 - Demment identified communication as a key limitation. Ouma and Mucai disagree, stating that adequate resources exist and it is more a matter of will and effort and time. Gichaba raises the point that no telephone or internet is available without walking across campus to the SUMAWA office and that infrastructure is a problem.
 - Demment indicates that a major problem is lack of timeliness in reporting, which leads to a cycle wherein work plans and budgets are not approved, which retards activities, resulting in limited success.
 - *Outcomes & Task Items:* (1) monthly co-PI meetings will be held, (2) focus on realistic assessment of team and research activity plans (RAPs) to make sure level of activity and expected outcomes are within the capability of the research team, (3) a formal student presentation forum or seminar will be created to



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promote communication, understanding, and excitement about the project, (4) co-PI meetings will have a standard agenda format with notes taken by Mary Ndivo, (5) the decision on hiring of a program manager / coordinator will be suspended pending the outcome from the entire SUMAWA team

- The entire SUMAWA team (minus a few members) was assembled to address weaknesses in the project and offer solutions. Four teams were created and tasked with identifying constraint, solutions, and action plans to solve the constraint. Each team reported their findings to the group in an open forum. Table 1 shows the outcome from this activity. The major areas of concern on which the team focused were (1) student progress, (2) time management, (3) communication, (4) reporting timelines, and (5) general planning. These four groups included a minimum of one co-PI, researchers, and students.

1. Student Progress		
<i>Constraints</i>	<i>Solutions</i>	<i>Task / Action Items</i>
Student identification	Get them in Yr 1, not wait until yr 2. Work with them during coursework. Proposals defended at the end of Yr 1. Then go right into field work and move through.	
Timing & method of recruitment	A student committee (project level). New idea: actively recruit students to work on the project throughout their MS.	Form a student committee – mix of PIs, researchers, students. Meet and come up with proposals. Chiuri, Shivoga, student (tbi), Liti – gather ideas, pros and cons, briefing on issues & recommendation.
Monitoring progress & supervision	Get the proposal started and worked on during the 1 st year in coordination with SUMAWA supervisor with the goal of having them defended at end of 1 st year. Improve communication between supervisors (non SUMAWA) and PIs	Regular seminars where students, SUMAWA team demonstrate progress. RAP coordinator & responsible person will be main supervisor. More clarification regarding student roles & specifics on duration, activities, etc. Improved internet access. Regular student/supervisor meetings (at least bi-weekly – fixed in a calendar schedule).

1. Time Management / Commitment		
<i>Constraints</i>	<i>Solutions</i>	<i>Task / Action Items</i>
Lack of timely coordination, implementation of the plan	Having a working calendar in place – sensitizing people to accomplish tasks.	PI puts together the macro-scale timing. RAPs include micro-scale timing. Communicate schedule among all members of the team.
Inconsistent flow of funds	Have timely budgeting, work plans, funds will flow. Timeliness of progress reports as well.	
Lack of compliance with RAPs	Components adhere to RAPs and harmonize activities.	Checks on the system of outcomes throughout the year. Monitoring system in place.
Task overloading. This is true both in terms of numbers of tasks and the timing of them.	Allocate loading among researchers. Realistic planning.	
Inadequate sense of ownership	Empowerment of all researchers. Example – student participation; vertical integration (up not just down). Individual motivation.	Open examination of linkages among all the project components and activities. Increased interactions among scientists and presentations. Create regular forums for discussions. SUMAWA student association responsible for putting on forums. Encourage publications, research briefs. Openness in work plans, etc. transparency in reporting and project details.
Inadequate planning	Planning	See section 5. Budgeting and work plans updated continually as accorded to the RAPs. Summaries of budgets available.
Incentive system	Better incentives	SUMAWA travel budget for attendance at conferences, annual GL-CRSP proposal process (Jim Ellis). Incentives program for “Best Research Brief”,

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		"Best RAP", "Best student Paper", etc.
3. Communication		
<i>Constraints</i>	<i>Solutions</i>	<i>Task / Action Items</i>
Access to internet, telephone, cost of mobile services	Each component allocated monthly airtime card. Improved access to internet. Additional computer to improve ratio of students/researchers: computers	Build in cost for airtime into baseline budget.
Lack of flow of information exchange. Up-down horizontal, etc.	Monthly PI meetings. Regular seminar series for components / students to share progress. Encourage people to attend conferences. Publications (articles, research briefs). Intracomponent info. exchange.	Create RAPs that draw across components.
Centralized data management system is lacking	Improve training. Provide more exposure to RDBMS	Create a tutorial and provide access to the computer, tutorial set.
Concern over data ownership	Control access to data & provide information on how it should be used, esp. unpublished data. Invest in a data manager. Quickly publish and get into print.	Create a rules of access / rights of use, publication. General agreement on data control.
US and Kenya teams not communicating effectively	More researcher–researcher, student-student communication. Individual linkages.	Add US students to the SUMAWA student association.
4. Reporting Timeliness		
<i>Constraints</i>	<i>Solutions</i>	<i>Task / Action Items</i>
Poor reporting from participants at all levels	Maintain work journals on regular basis (daily, monthly). Example: ecology team meets monthly for data collection; should have journal of activities to show exactly what was done.	
Delayed activities / implementation	Create a forum for reporting.	Group forums. Co-PI monthly reports.

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Lack of system to monitor field activities	System for monitoring in place.	Calendar and reminder system. White board. Reminder system in place. Each person has calendar of events, deadlines in office.
Commitment to project	Enhance ownership	
Attention to work plans and activities lacking	Constant reference to activity plan.	Improved RAP
5. General Planning		
<i>Constraints</i>	<i>Solutions</i>	<i>Task / Action Items</i>
Inadequate linkages among components during planning	More integration and closeness in planning. Activities dependent on output.	
Lack of detailed activity planning (specifics)	Capacity building on research plan writing, proposals, etc. Attend other components presentations.	
Lack of uniformity in participation among researchers, external persons & remuneration		
Disparities in budgets & funds allocated to activities	Need for communication in any funding changes. Team members participate in any changes.	
Prioritization in RAPs and budget lines		
Unplanned additional costs come up	RAPs should be detailed and well thought out to cover costs. Encourage student involvement in RAPs, try to foresee costs as much as possible to support MS research. Add in some contingencies.	
Planning must make sure competent personnel matches	Match up activities and persons better.	
Rigidity in plans prevent changes	Decisions must be faster and collective.	
Lack of effective consultation among components	Long term realistic planning	



Impromptu planning	Activities implementation calendar, etc.	
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- A discussion was raised with respect to the addition of the program manager / coordinator. Some expressions of concern were raised by Drs. Liti and Chiuri, who were primarily concerned that this would run counter to the capacity building aspect of this project. Demment assured the team that if a program manager were to be brought on board they would be responsible for providing some on-the-job training and potentially initializing formal courses, with the intent that this would be a short-term opportunity and that in the long run this program should ideally be held by a Kenyan.
- The Kenya team agreed that they would take until Nov. 30 to either (a) come up with a draft terms of reference for the program manager position or (b) come up with a solution that would not require this hire.
- **Nov 18.** Final reporting, meetings, and departure.
 - Met with Akula to finalize reporting on student progress and training for the 2003/2004 Final Report.
 - Met with Shivoga to go over the results from the previous day
 - Met with students Kibichii and Milkah and Dr. Shivoga to review the upcoming START Fellowship program. Each of the three Kenyans are interested in sending in an application, due Dec 1. An action plan was created to try to reach this goal.
 - Met with student Mainuri Z. Gichuru to demonstrate the use of the portable rainfall simulator. Gichuru will be using this instrument prior to the long rains to determine the range of field infiltration rates and hydraulic conductivity throughout the watershed. Gichuru is to prepare a field data collection sheet and I am not work on a more legible manual, including photographs taken during the training.
 - Met with Cheruiyot, who submitted his resignation from the project. Cheruiyot expressed clearly that he holds no animosity to the project and is willing to participate in two strategic ways (1) assisting students in the pursuit of their SUMAWA-related research and (2) allowing SUMAWA access to and the use of his farm within the watershed for experiments and intervention testing. This offer is greatly appreciated, especially in light of his departure from the project.
 - Departure for Nairobi, 4 pm.



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**APPENDIX I = SUSTAINABLE MANAGEMENT OF WATERSHEDS – CRSP
INTEROFFICE MEMORANDUM**

TO: SUMAWA PROJECT MEMBERS
FROM: SCOTT N. MILLER, LEAD PI
SUBJECT: THE WAY FORWARD
DATE: AUGUST 15, 2012
CC:

Dear All,

Over the past several years we have worked to pull together as a functional research team. It is clear that the project we are undertaking is both critical and complicated, and thus worthy of our focus, time and best efforts. It has become apparent that we are struggling to fulfill our core research responsibilities and failing to meet the tasks and objectives laid out in our scope of work. This memo outlines some considerable efforts aimed at reorganizing, streamlining, and re-focusing the team in order to meet our lofty agenda. Let me be clear that the US contingent composed of Drs. Demment and Jenkins, Ms. Johnson and myself, are fully supportive of the project and are completely committed to its ultimate success. However, we are in agreement that, in the absence of significant alterations in the manner in which research is conducted and completed, this project will not succeed. Towards that end, Dr. Jenkins and I have been working together to come up with a plan that will be accepted by the management entity (GL-CRSP) and will be a successful model for research in Kenya. We have struggled a bit to find our footing over the past 2 ½ years, but I am convinced that we can pull together as a team and perform great and important work. Let me begin by summarizing the key findings with respect to flaws in our research program.

Accountability

The first major area of concern lies with accountability. Please refer to the appendix for a table of outcomes related to the 2003/2004 work plan. You will note that a great many tasks have not been initialized, many more are in progress but not completed, while only a few have achieved completion. Quite frankly, this is untenable in a research grant such as this. There are a large number of research scientists and associates on the team, and we need to reiterate the call for what Dr. Demment referred to as “Integrity in budget and integrity in research”.

For certain we have had problems relating to cash flow and momentum in project management. I accept some measure of responsibility in this arena. However, I have grown increasingly frustrated with the lack of progress and accountability related to the work plan, and this has led to somewhat of a cycle of trouble: the lack of reporting makes it impossible to issue new money, and the lack of money seems to halt activities, guaranteeing a lack of progress, which causes its own set of problems in budgeting and planning activities. Clearly this is an area in which we must improve. However, it is unacceptable to consistently use budget and resources as a limiting factor for activities – we have abundant resources available for the project and remuneration for activities is substantial. Delays in funding may prohibit certain field activities, but they most certainly do not impact intellectual and office-related activities.

Following up on the data in the appendix, it is clear that we have failed to complete several critical path products, which in turn will impair our ability to move forward. Examples include (a) lack of instrumentation, (b) incomplete PRA’s, (c) incomplete household survey, (d) lack of groundwater-related assessment, (e) lack of water quality and health-related data. Significantly, there is an absence of reporting, including journal articles, conference proceedings, white papers (such as research briefs), or internal reports. A major source of concern identified in the Spring and followed up intensively in the summer was the issue of data stewardship, accounting, quality assurance and management, a subject we must address if we are to move forward.



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Project Organization

The second area of concern lies with project organization. Please refer to a memo produced this summer in which this subject was discussed at length. The importance and role of the co- and lead-PIs is significant, but the ultimate progress on this project will be made at the researcher level, and a hierarchical system such as ours has made project management challenging and allowed for activities and research results to be ignored without consequence.

The program management structure such as was developed over the summer is sound and we will retain it in its core. During group and PI-meetings this summer it became clear that the upper-management structure was inefficient, and that more intensive oversight of activities is required. However, this puts a great deal of pressure on the Lead PIs (Miller, Jenkins, Shivoga), two of whom are in the US, and one of whom already assumes a tremendous administrative burden. Adding more requirements for individual and project oversight to the Lead PIs is, in short, not feasible and a different alternative is necessary.

Following on a point that was established during the summer, we will be evaluating the research team for function and progress relative to overall progress to date with particular attention to critical path activities from the 2003/2004 work plan identified in the appendix. The Lead PIs (US and Kenyan) are undertaking a comprehensive project review with the intent to match expertise and productivity with the activities approved for the 2004/2005 work plan. Persons who have been productive and demonstrated a clear commitment to the project will be given preference for continued research activities. However, approved research activity plans (RAPs) that require expertise not found in the current research team will be made available to a larger pool of qualified scientists.

Remedies / Changes to the Project Management

This section relates to the changes in SUMAWA project and program management that will be immediately instituted.

- Addition of a research program manager to the SUMAWA team. This will be an additional administrative layer, and the person will have a primary skill set that has good research management skills and experience. This position will be created in the Fall and advertised widely and we anticipate having this person in place by February, 2005. The program manager will serve as a primary point of contact for the US PIs, and whose focus is on day-to-day research planning and management, communication, facilitation in coordination with Shivoga (lead PI and responsible for scientific agenda) and Akula (project administrator). This position will not supplant Dr. Shivoga, who retains all titular responsibilities as the Lead PI and will maintain the primary research and coordinator in Kenya.
- We will build in some capacity building / training for enhancement of basic skills for project team members and leaders. Training will be in 3 areas: (1) project management/administration, (2) time management/effective strategies, (3) science leadership, such as “How to write a RAP”.
- We recognize that a major reorganization of the scientific and management component of project is needed, with the consequence of scaling-back on some of the objectives for the project as laid out in the original proposal
- We will create a 2-phase (Phase I, II) research plan for the coming year.
 - In Phase I (Oct 1 – Jan 31) perform project review & capacity building in Kenya. Minimal activities will be supported in Kenya. This represents an effective “hiatus” on the project except for data synthesis and report writing, on-going data monitoring data collection, salary for Mary and approved students (new and continuing students will be selected for the project in joint consultation with the US and Kenya PIs). During this period the US Lead PIs will review outcomes from 2003/2004 & determine which RAPs for 2004/2005 will be filled with people on the project & which will go out for a formalized request for qualifications, which will draw from talent wherever it resides. This is a major step: the idea that the research plan will dictate the need for personnel, including hiring people to perform tasks who are not already in the existing structure of the project.
 - Phase II: the new program manager is hired & moves to Egerton, RAPs are initiated with appropriate personnel.

Tentative Timeline of Activities



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- Nov 12: Annual Report due to ME with summary of all project activities. Review of activities, budget allocation, and team performance (including individual scientists) by US Lead PIs.
 - Nov. 16-18: Project retreat at Egerton. Miller, Demment, Johnson to travel to Kenya and meet with project members.
 - Nov 30: Determination of the FY 2004/2005 RAPs and issuance of necessary requests for qualifications.
 - Dec. 31: responses to the RFQs are due.
 - January 31: Review of responses to RFQs and the possible addition of new personnel.
 - February 1: Start of Phase II.

I realize that these changes represent a significant impact to the project and many of you individually. As stated earlier, however, there is little hope of a continuation of this project in the absence of these changes. Both Dr. Jenkins and I continue to hold great affection for the project and are enthusiastic towards achieving our research and development goals. Moreover, we are in agreement with Dr. Demment and Ms. Johnson that this re-organization represents the truest way forward and best hope for success. Please join me in viewing these changes as an opportunity to make a positive change and set the project forward. I look forward to seeing you soon.

Sincerely,

Scott N. Miller
Lead PI

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APPENDIX - SUMMARY OF STATUS OF 2003-2004 WORKPLAN

NOT STARTED	PARTIALLY COMPLETE	COMPLETED WITH PRODUCT AVAILABLE
1.1 Grazing Assessment	1.3 Ecological Health - Lake Nakuru	1.2 Soil characterization
2.3 BIOMAT	2.1 AGWA	1.4 Land use/cover
2.4 RUSLE	3.2 Household survey interviewing	2.2 WEAP test application
4.3 Tiered Workshops	3.3 Code, clean, analysis of household survey	3.1 Household baseline questionnaire
5.3 Comparative rain data analysis	3.4 Epidemiological analysis of fecal disease	3.6 Trade-off model
5.4 Groundwater assessment	3.5 Farming system and agroforestry assessment	7.1 GIS training
6.3 Agroforestry	4.1 Inventory of stakeholders / institutions	7.2 WEAP training
6.4 Nursery assessment	4.2 PRAs, reports, & synthesis	7.3 Wilkister UCD studies
9.4 PRA manual	5.1 Rain gages	7.4 GIS training
	5.2 Runoff gages	8.1 Economics review
	6.1 In-home water quality trial	9.1 Dissemination
	6.2 Pond aquaculture	9.2 Papers, etc.
	8.2 Restructure econ framework	9.3 Outreach, visits
	10.3 Drinking water quality assessment	
	10.1 WEAP input	

BLUE FONT = These items have been on the work plan of the 1st and 2nd year of the project and still remain uncompleted.



2003-2004 critical path activities that must be completed.



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APPENDIX II - SUSTAINABLE MANAGEMENT OF WATERSHEDS – CRSP
INTEROFFICE MEMORANDUM

TO: SUMAWA TEAM MEMBERS
FROM: SCOTT N. MILLER, LEAD PI
SUBJECT: STUDENT RECRUITMENT AND ROLES WITHIN THE PROJECT
DATE: JULY 26, 2004

To all team members,

This memo is in respect to the roles, expectation, and recruitment of students for work on the SUMAWA-CRSP project. Over the past two years as the project has gained momentum we have followed an *ad hoc* recruitment policy for student engagement and training. As we are entering into the fully mature stage of the research project we are faced with the necessity of instituting some formality to the student selection and funding process.

First, students will be recruited for the project through a competitive hiring practice. The co-PIs will draw up a brief job description that will be tied directly to one or multiple research activity plans. A formal notice will be widely distributed so as to expose as many potentially qualified persons as possible to the scope of work. It is expected that the successful student candidate will focus his/her research agenda and proposal on a topic covered in the job description (and thereby on a RAP). This approach serves multiple purposes: (1) students will focus their research and professional obligations towards the same goal, enabling them to complete their studies in a timely manner and fulfill the research agenda of SUMAWA, (2) the competitive recruitment policy will ensure that SUMAWA identifies and promotes the strongest candidates for professional development, and (3) it ties the student and faculty advisor directly in pursuit of the same goal. Please note that *all* new student hiring for the 2004/2005 research plan will fall under this category; no persons have been officially granted student status for the Fall.

Second, we will continue to fund partial scholarships at both Moi and Egerton Universities with a monthly stipend of 9,000 Ksh.

Third, SUMAWA has adopted a policy of not funding new PhD students. An exception will be granted only under exceptional circumstances, in which case a petition should be made and presented to the co-PIs for approval. We have instituted this policy because we feel that it the project is in a stage wherein would be challenging to successfully finish a PhD program of study during the remainder of the project. We feel that it is irresponsible to encourage people to attempt a PhD that might extend beyond the length of the project, leaving the student in a position where he/she has no assurance of funding or guarantee of intellectual support or access to resources and have therefore determined that new students should be accepted at the MS level.

If you have any questions regarding these policies, I would be happy to discuss them with you.

Sincerely,

Scott N. Miller
Lead PI