

THE MCKNIGHT FOUNDATION
Collaborative Crop Research Program

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CCRP Quarterly Newsletter

To: The McKnight Foundation Board and CCRP grantees
From: Office of the CCRP Program Director
Reporting period: April-June 2007

QN2_07
CCRP News
Program highlights

- July 2007: Third meeting of the Andes Community of Practice (CoP), Cuzco, Peru.

This third annual Andes CoP meeting was held July 16-21 in Cuzco, Peru. Representatives of the eight CCRP projects in Bolivia, Ecuador and Peru shared strategies and plans for their projects and explored topics of mutual interest. The meeting's special topic was risk management. Invited guests addressed issues related to water harvesting, soil health, insect pests and climate change. Claire Nicklin coordinated the meeting and Myriam Paredes facilitated the event. ITDG and INIA put together a fabulous field day that was much appreciated by all.

- In late June, Dr. Hamado Tapsoba was selected to be the CCRP's new Regional Representative for West Africa. He will be replacing Mr. Mamadou Chétima, who has served as the CCRP's W. Africa Regional Representative for the past year. In September, Mamadou will return to the US to complete his doctoral work at Cornell University. Hamado is based in Burkina Faso and currently works with the Japan International Cooperation Agency (JICA). He has a great deal of experience with coordinating the implementation, monitoring and evaluation of development projects. He has been involved with projects that range from improvement of agricultural production and food security to leadership development. Perhaps some of you know him already, as Hamado had been collaborating with researchers from INERA (Burkina Faso), ICRISAT and many community organizations, local and international NGOs, and decentralized and central state offices. Mamadou Chétima, the outgoing West Africa Regional Representative, has been working with Hamado to ensure that there is no transitional gap for support. Welcome to Hamado, and best wishes to Mamadou!

- On May 29, Pennsylvania State University President Graham Spanier and South China Agricultural University President Chen Xiaoyang signed an agreement during a celebration that commemorated 100 years of collaboration between PSU and SCAU. The ceremony also marked the inauguration of the Joint Root Biology Laboratory. For more information, click [here](#). Congratulations to the 🏠 [P-efficient legumes](#)



[\(China/Mozambique\)](#) team, and here's to another 100 years of fruitful collaboration!

- In May, former CCRP Oversight Committee members Prabhu Pingali and Qifa Zhang were among the 18 foreign associates elected to the National Academy of Sciences. Prabhu Pingali is currently the director of the Division of Agricultural and Developmental Economics for the Food and Agricultural Organization in Rome. Qifa Zhang is professor and director of the National Key Laboratory of Crop Genetic Improvement at the Huazhong Agricultural University in Wuhan. The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. It was established in 1863 by a congressional act of incorporation signed by Abraham Lincoln that calls on the Academy to act as an official adviser to the federal government, upon request, in any matter of science or technology. Congratulations, both!
- The CCRP initiated an effort to further support science quality and impact of CCRP projects through Technical Assistance (TA) to its regional Communities of Practice. This will allow CoP project teams to avail of expertise that could enhance their projects' ability to fulfill their objectives. TA provided at the level of a single project is negotiated between the project leader and the program director. In some cases, TA will be provided to multiple projects for a topic of cross-cutting importance to the CoP through a workshop and other mechanism. When multiple projects need related types of support, CCRP management may solicit a grant proposal that would eventually be presented to the McKnight board for consideration. The Foundation has allocated \$25,000 for TA for each of its regional CoP groups during 2007. Up to \$5,000 will be considered per TA request. A project could request more than one form of technical assistance. For more information, see our announcement on the website's [announcements page](#), as well as the [original announcement document](#).
- In May, an article entitled "The Top Secret Superfood" was published in Men's Health magazine. Daniel Fairbanks of the [Quinoa \(Andes\)](#) project was interviewed for the piece. The article discussed the health benefits of quinoa, which is said to be among the most nutritious foods on the planet. The article also gives suggestions on how to prepare quinoa for quick and easy healthy meals. The article can be accessed by clicking [here](#).

Reports

- Annual reports received this quarter: [Grain legumes \(Mali\)](#), [Insect pest management \(West Africa\)](#), [Nutrition \(Mali\)](#), [Seed systems \(West Africa\)](#), [Sorghum/millet improvement \(West Africa\)](#), [Sweetpotato \(Burkina Faso\)](#), [Finger millet \(India\) extension](#), [Sweetpotato breeding \(Uganda\)](#), [Biodiversity and soil \(Peru\)](#), [Cover agriculture \(Ecuador\)](#), [Green manures/legumes \(Bolivia\)](#), [Lupine/quinoa \(Ecuador\)](#), [Native potato \(Peru\)](#), [Potato moth \(Ecuador\)](#), [Seed systems \(Ecuador\)](#), [Sweetpotato diversity \(Kenya\)](#)
- See the deadlines page of the CCRP web for upcoming report deadlines. <http://mcknight.ccrp.cornell.edu/participants/deadlines.html>
- Since last quarter, we have taken important strides to improve program M&E, as well as project administration and reporting. See the sections below for more information.
- See the project updates section to learn about what our projects have accomplished since last quarter.

Modifications in CCRP Administration and Reporting

Over the last quarter, policies for annual reporting have been modified. We have added a webpage update and eliminated the workplan form in favor of a free format. Read on to find out what other modifications have been made, as well as to re-familiarize yourself with reporting requirements.

Your report will be made public through your project's web page on the CCRP web. Please make sure it is timely and reflects well on your project team, on your organizations and on the CCRP. If you wish to include information that should not be made public, please provide a separate file marked "confidential."

The program uses the information to inform decisions about project renewals. The McKnight Foundation needs timely annual reports before it can release funds for the next payment.

»New requirements for annual reports

Please note the following new criteria (marked in **bold** text) as you write your next annual report:

1. Web page update (1-2 pages maximum)

Please provide an updated version of your CCRP project web page, using language suitable for the general public. Please include an overview description of the project (may remain as previously, if appropriate) and an update on project accomplishments. Please update the other information on the web page as necessary.

Note: web page updates can be submitted at any time, not just once a year! This is encouraged!

2. Research report section (1-5 pages per objective or module, not including the appendices)

Please report by objective (or module), including the following components for each:

- *Authors.* Please indicate clearly who did the work [name(s), including students and non-technical personnel and their respective organizations and locations].
- *Introduction.* Provide an introductory narrative giving the context of the research (how the objective or module fits into the larger picture, the research questions you're trying to answer, etc.).
- *Narrative summary.* Please indicate clearly what was done over the past year. What methods were used and what results were obtained? What is in progress with results pending? Please be succinct, quantitative and analytical.
- *Implications of the research findings.* Please state the implications of the theme's research findings:
 - For the next stage of the research
 - For future development activities
 - For policy (if appropriate)
- *Appendices: tables, figures, photos, etc.* Please provide summaries of key data, using appropriate statistical analysis. Photos may be used to enhance the website.

3. Team report section (1-2 pages)

This section should include the following:

- *Team activities.* Report on the team activities that took place during the previous year [meeting(s), exchange visit(s)].

- *Insights and lessons learned.* Summarize the major insights and lessons learned during the year. Explain how these will be used to modify future activities (or objectives, strategies, etc.) so as to improve project effectiveness.

4. Workplan

The workplan is the core document for the partnership's operations and the basis for a detailed, activity-based budget. It is the platform for ongoing discussion, planning, and negotiation amongst project partners, as well as between the project team and the Foundation. Each year, the Foundation requests a revised workplan for the upcoming year. **Please use your own outline style when preparing your workplan. Note that the workplan form previous used is no longer required; please use any format that you find useful.**

When preparing this document, it may be helpful to consider the questions "who, what, why, when, where, how and how much?" Each specific objective is expected to have one or more corresponding output. Each output is expected to correspond to one or more activities. Each activity is expected to correspond to one or more indicators, and to one or more responsible party.

5. Budget

The budget should be clearly linked to the project activities in the workplan. It should be accompanied by budget notes that describe how the funds will be spent and how they were calculated. Please use the three page budget template provided by the Foundation. This Excel file is available on the [CCRP forms page](#).

In preparing the budget, please note the following:

- Salary allocations for individual activities must include a description of who will conduct the work (technician, student, casual labor, etc.) and how much time they will devote to the activity.
- Per diems, also known as daily subsistence allowance (or DSA) which are paid to cover the cost of meals and accommodations when project personnel are in the field, should be covered under travel expenses. Per diems should be consistent with government policies and the current published rates. Please specify your per diem policy in your budget notes.
- Funds may not be used for the salary of principal investigators employed by advanced-lab institutions or international agricultural research institutions. Salaries of junior or temporary staff may be supported.
- Institutional overhead payments can not exceed 10 percent of direct costs attributable to that institution.

6. Publications summary

Please send us your most recent compilation of publications related to McKnight funded activities. These can include published journal articles, book chapters, posters, theses/dissertations, presentations and extension materials.

7. Training and outreach summary

Please send a separate page summarizing project activities related to capacity building, including completion of degrees; non-degree training for researchers; workshops for farmers, researchers, or community members. Please complete the training table provided on the forms page of the CCRP web.

8. Financial reports

Please make sure that we receive a signed copy of financial reports from every partner directly paid by McKnight.

9. Wire transfer forms

For partners outside of the U.S. who are being directly paid by McKnight, please make sure to send wire transfer forms with correct bank information.

All forms can be downloaded on the [CCRP forms page](#).

Upcoming CCRP events

2007

September

25-28 First meeting of the E/S Africa Legumes Community of Practice, Lilongwe, Malawi

The first meeting of the E/S Africa Legumes Community of Practice will take place September 25-28 in Lilongwe, Malawi. E/S Africa Regional Representative Rose Mongi will coordinate the meeting. More details will follow as they are developed. Claire Nicklin, the CCRP's Andean Regional Representative, will serve as facilitator for the event.

December

1-6 Triennial Grantee Conference, Chantilly, France

The next grantee conference will take place in Chantilly, France on December 1-6, 2007. Representatives of all active CCRP projects will be invited to the meeting. We are in the process of organizing invitation letters for visa purposes. More details will follow as the meeting is organized.

Recent and upcoming related events

2007

September

12-16 Generation Challenge Programme's 2007 Annual Research Meeting, Benoni, South Africa

The Generation Challenge Programme's 2007 Annual Research Meeting will be held on African soil for the first time in Benoni, South Africa from 12–16 September. The program is expecting more than 180 scientists from around the world who will discuss and plan GCP activities.

19-21 New Approaches to Plant Breeding of Orphan Crops in Africa, Bern, Switzerland

The conference, "New approaches to plant breeding of orphan crops in Africa," will take place September 19-21, 2007 in Bern, Switzerland. The event is being organized by the University of Bern. The conference website says that orphan crops are crops of high economic value in developing countries, particularly in Africa. These include cereal crops (such as millet and tef), legumes (cow pea, grass pea, and bambara groundnut), and root crops (cassava and sweet potato). The Swiss conference will bring together scientists from both developed and developing countries to discuss techniques that could be implemented in a scheme of orphan crop

improvement. In addition, the future prospects and feasibility of modern biotechnology in African agriculture will be discussed. The conference website can be viewed at the link below. (Source: *University of Bern*). For more information, visit the following link:

<http://www.botany.unibe.ch/deve/orphancrops/index.htm>

October




15-19 Controlling Epidemics of Emerging and Established Plant Virus Diseases: The Way Forward, 10th International Plant Virus Epidemiology Symposium, ICRISAT, Hyderabad, India.
The 10th IPVE symposium will provide a forum of experts for exchange of information on the causes of virus epidemics, with a principal focus on virus disease control. It is a great opportunity particularly for young scientists and students to meet and interact with eminent virologists from across the globe. Visit www.ipve2007.net for latest updates and for pre-registration online to receive further updates on the meeting:
<http://www.ipve2007.net/registration.asp>.

CCRP web update

The CCRP web is located at... <http://mcknight.ccrp.cornell.edu>

CCRP web snapshot

As of 7/23/2007:

- Total number of files associated with the CCRP Web: 2,351
- Total number of links: 23,252
- Total number of HTML files: 927
- Total number of tagged HTML (those that we update on a regular basis): 247
-  Total number of pages in English: 164
-  Total number of pages in Spanish: 54
-  Total number of pages in French: 29

In April-June 2007, we had an average of **3084** unique visitors per month.

Upcoming changes to the CCRP web

- *CCRP M&E database.* Over the next couple of months, Kelly will be developing a database that will facilitate monitoring and evaluation of both CCRP projects and the program itself
- *Random picture generator in left-hand corner.* All browser users will soon be able to enjoy CCRP related photos appearing in the left corner of every page based on the page's theme.
- *Updated project pages.* Kelly will continue to update the look and feel of project pages.

Keep checking the site to know what is happening in the CCRP, and **update your project pages regularly!** If you have any impact statements, publication lists, or any other updates, please contact Kelly Lindsay.

Updates from the CCRP Projects. The updates below are published as received. Minimal edits have been made.

International Collaborative Projects

Rice biodiversity (Southeast Asia)

- Project annual review and planning was held in Luang Prabang, Lao PDR on April 29-30, 2007, attended by partners from Cambodia Agricultural Research and Development Institute (CARDI), Chiang Mai University (CMU), Columbia University (CU), Lao Agricultural Research Center (LARC), New York Botanical Garden (NYBG).
- A field workshop on diversity analysis was conducted on May 1-6, 2007 in Luang Prabang and Luang Namtha in northern Lao PDR, attended by research teams from CARDI, CMU, CU, LARC and NYBG.
- Two graduate students from CMU joined the LARC team at the Vientiane Agricultural Research Center to conduct research on iron toxicity tolerance (April – May).
- Two graduate students from Laos in agronomy MS program at CMU conducted field work (one on genetic diversity of upland rice and one on micorhiza fungi for agroforestry) in northern Laos (March – June)
- Three graduate students from partner institutes (two from CARDI one from LARC) commenced MS study program in agronomy in June.
- Gene flow to weedy rice team at CMU is drafting a book “Weedy Rice: its invasiveness, spread and control.” View the table of contents below (authors are in brackets):
 - I. Weedy rice history, spread, distribution (Sansanee, Chanya)
 - Farmers’ definition: *Kao Hang, Kao Deed, Kao Daeng*
 - II. The common wild rice, distribution and diversity (Anupong, Adirek, Tonapha)
 - III. Gene flow between cultivated and wild rice
 1. Inter-fertility between cultivated and wild rice (Sunisa, Theerasak)
 2. Segregation of hybrids (Amena)
 3. Evidence of gene flow in farmer’s field (Atitaya, Sunisa)
 - IV. Invasiveness and impact
 1. Conditions
 - Changes in rice cultivation
 - from transplanting to direct seeding
 - hand to combined harvesting
 - year-round rice cultivation
 - Seed contamination (Ronnachit, Atitaya – include Panomwan’s old data)
 - Competition (Ronnachit)
 2. Impact on yield and quality (crop cut data) (Sansanee)
 3. Economic impact (Ariya)
 - V. Control of weedy rice
 1. Elements of the control
 - Clean seed (Suthipong)
 - Integrated control (Chanya)
- 2. Multi-partner participatory research (Chanya)

📍 Sweetpotato breeding (Uganda)

- One of the of the four graduate students, Ms Harriet Muyinza, on the sweetpotato McKnight Collaborative Research Program (CCRP) project in Uganda, doing her PhD at Makerere University on “the relationship between phytochemical composition and levels of sweetpotato root resistance to *Cylas* spp.”, attended a one-month training course at Wageningen International in the Netherlands from May 21 to June 15, 2007. The training was organized for agricultural researchers, university lecturers, extension staff, farmers, input suppliers and policy officers from 13 developing countries of Asia and Africa continents, and Oman, involved in crop protection (entomology and pathology). Except for the participant from Oman, the Netherlands Organization for International Cooperation in higher education (NUFFIC) funded all the training expenses. The training was intended to increase stakeholder awareness on issues concerning IPM policy, development implementation and enhancing of farmers’ skills on techniques of increasing product safety for local and international markets.
- A new National Forestry Resources Research Institute (NaFORRI) Headquarter was commissioned at Kifu in Mukono District near Kampala on May 19, 2007. This was part of the Manisto Week (May 12-19, 2007) during which the current government highlighted outstanding projects as part of progress made by the government in implementing the 2006 government manifesto. The sweetpotato program based at Namulonge exhibited at NaFORRI one poster, ‘Sweetpotato for food, health and income’. The sweetpotato program invited one farmer who is also a cottage processor, Mrs Joweria Sekiyanja based in Luwero District, and one medium-scale processor, Mrs Jacinta Kalonda of Kasawo Millars based in Kampala to exhibit their products at NaFORRI. Mrs Sekiyanja exhibited sweetpotato processed products (e.g. cookies, chapattis, doughnuts, juice, buns, pancakes, bread, bagia) from orange-fleshed sweetpotato (OFSP), while Mrs Kalonda exhibited composite flour (OFSP/maize/soybean) for making baby food. Both ladies drew large crowds, especially after observing that, the National Resistance Movement (NRM) Secretary General and Hon. Minister for Security, Amama Mbabazi, who represented the President of Uganda to officiate the commissioning of NaFORRI, spent quite some time asking interesting questions about the sweetpotato exhibits.
- A new Director of Research for the National Crops Resources Research Institute (NaCRRI), Dr. James Ogwang, was appointed to start duties by July 2007 following interviews to replace Dr. Fina Opio, who joined ASARECA as Staple Crops Manager. Dr. Ogwang has been Director of the Coffee Research Station at Kituuza near Kampala. Before joining Kituuza Dr. Ogwang was the Head of the Biocontrol Unit at Namulonge. The sweetpotato project based at Namulonge funded by the CCRP is under NaCRRI.

📍 Tef/finger millet (East Africa)

- A new tef variety named '*Gamachis*' has been approved by the National variety Release Committee for official release in the moisture-stress prone tef growing areas of the great rift valley in Ethiopia. *Gamachis*, which in Oromiffa translates to "makes happiness", was selected by tef breeders at one of the project cooperating centers, Melkassa Agricultural Research Center, from the cross between DZ-01-196 and DZ-01-974. This is the same cross from which the variety *Quncho* was released last year for optimum tef growing areas. *Gamachis*, has a higher yield and better seed quality than the well-adapted variety to those areas, DZ-Cr-37 (Tseday). What is interesting from breeding viewpoint is that two varieties have been developed from the same cross but to different agro-ecologies.

- Stakeholder and farmer training workshops were conducted in Ethiopia (tef) and Kenya (finger millet).
 - In Ethiopia, the objectives were to forge partnership among District Bureaus of Agriculture, Farmer's Cooperative Unions, farmers and researchers in order to produce and disseminate the new tef variety, *Quncho*. The stakeholders meeting was held on May 2-3, 2007, at Debre Zeit Agricultural Research Center, when responsibilities among stakeholders have been shared and agreements were signed. Subsequently, 80 representative farmers and 25 extension personnel from four of the project districts were given training on quality tef-seed production in June 15 - 16, 2007. Seeds of *Quncho* are distributed to farmers for planting in July.
 - In Kenya, Finger Millet Project Stakeholders workshop was held in May 27 - 30, 2007, at Busia Agricultural Training Center. A total of 41 people attended the workshop: 11 farmers (6 women and 5 men); 5 extension officers; 14 researchers from KARI-Kakamega; 3 from the private sector (finger millet milling); 2 each from Kenya Agricultural Productivity Project and ICRISAT; 1 each from Kenya Plant Health Inspectorate Services, a community based organization and provincial administration. Matters of finger millet production, value chain and marketing were the main issue addressed. This was followed by a 5-day training course (June 3-8) for 45 persons, out of which 35 were farmers. The training course covered marketing and market structures, farmer involvement in marketing, collective marketing, market information and intelligence, pricing and post-harvest product handling, market linkage and planning. Certificates of participation were issued to the farmers; they described the course as enlightening and informative.
- Our progress in tef molecular genetics in this quarter was as follows:
 - **Comparative mapping:** Only 14 out of the 223 primer pairs from pearl millet screened for Single Nucleotide Polymorphism (SNP) have showed polymorphism between the two parental lines. All 14 primers were applied to the ~ 160 recombinant inbred lines, results were scored and data is ready for statistical analysis. We have not succeeded yet in getting any of the 30 primers pairs from finger millet to work on tef. We are in contact with the lab that provided the primers to try and optimize or procedures.
 - **SSR development:** We now possess a genomic library of 672 colonies. After a PCR screening protocol, 384 of those colonies tested positive for the presence of SSR motifs. Sequencing all 384 colonies have indicated that the enrichment level is 54.5%. Results have shown that 183 sequences were redundant, and 26 were unsuitable for primer design. A total of 97 sequences were suitable for primers design, 30 of which are already tested and showed amplification in the parental line KM from which the library was constructed. The first 10 primers tested on the two parental lines were flanking between 9-35 di-nucleotide repeats. Five have indicated polymorphism the parental lines as seen on polyacrylamide gels.

Regional Communities of Practice (CoPs)

E/S Africa Legumes

🏠 Bean seed (E/S Africa)

Since the inception of the project in December 2006, several activities have been carried out. This report gives two detailed quarterly reports in the year 2007 (Jan-March and April-June). All the activities were carried out with financial advance supports from the Southern African Bean Research Network (SABRN).

A. First Quarter: January –March 2007

- **Consultative meetings/discussions for project initiation.** The national bean research programme leaders held a one day consultative meeting with the partners in their respective countries with the following objectives:
 - To introduce the project to partners (PVS establishment)
 - To plan for the crop season (January- on ward)

Table one gives information on consultative meeting (participants and partners)

Table 1: Consultative meeting in the partner countries

Country	Number of participants	Representatives of partner organizations
Malawi	12	NGO partners (CARE, World Vision, Action Aid, Ekwendeni Hospital, Northern Corridor) Representatives of government extension service (Bembeke and Mpingu Extension Planning Areas) Seed services in DARS
Mozambique	14	NGOs partners (APLA, World Vision, Mozambique Leaf Tobacco) Representatives of government extensive services (7 districts agricultural offices)
Tanzania	16	NGO partners (Caritas of Mbeya Diocese, ADP Mbozi and Isangati Agric. Development Organization) District Extension services (Mbeya, Mbozi and Cunnya)

- **Participatory Variety Selection (PVS) trial establishment/layout.** During this first quarter, several PVS trials were established except in some part of Mozambique where the crop season starts early April (see Table 2)

Table 2: PVS trails establishment in the three partner countries

Country	Number of sites	No entries
Malawi	17	19 ‘ best bet ‘ genotypes and local check
Mozambique	24 sites to be established in the second quarter	
Tanzania	78	11 ‘ best bet’ genotypes and local check

N.B. Each PVS site is hosted by a farmer self help group supported by a local partner organization (either government extension or/and NGO in collaboration with government extension). Training topics covered were:

- Overview of the project (roles, responsibilities and expectations)
- PVS activities/overviews
- Working with farmers/users in PVS
- PVS trial design and establishment
- PVS evaluation process (theory and practices)
- PVS data recording and reporting

The training which targeted the facilitators of the PVS trials establishment/management. Table 3 gives information on the participation.

Table 3: Training participation

Countries	No of participants
Malawi	22
Mozambique	26
Tanzania	30

B. Second quarter (April-June)

- **PVS trial sites establishment in Mozambique and Malawi:** Since the crop season in some bean growing areas of Mozambique starts in March-April, 20 sites were established during this quarter and additional 13 sites will be established in the third quarter. In Malawi, six additional sites were established to assess the best 'bet' bean genotypes under the residual moisture (winter season).
- **PVS trials evaluation:** The national bean programmes and their partners in three countries continued the evaluation of PVS whose data will be shared among national partners (crop season results -feed back sessions) in the third quarter (July-August). For each site, the best variety (ies) was/were identified by farmers (female and male) and other end users. Furthermore, the selection criteria for each variety were also noted. These major selection criteria include: marketability, early maturing, productivity and multiple uses (leaves). Some of sites in Mozambique experienced severe attack of bean stem maggot (BSM).
- **Seed increase:** Farmer group based seed increase of the best variety (ies) is under way in each PVS site by farmer self help groups in Malawi. The production of two promising varieties (Sugar 131 and Bonus) by a local seed producer is going in Mozambique. He got 50 kg of foundation seeds for each variety. In preparation of the next crop season, plans are under way to increase seeds of the tested bean genotypes by national bean research programmes.

🏠 Cowpea/*Alectra* (E/S Africa)

During this quarter the following listed activities were undertaken by the project.

- **Capacity building of farmer groups.** This is an on-going activity aimed at building organizational capacity of Farmer Groups for participating effectively in project activities. It involves a series of action-training sessions for learning together with farmers on principles of group organization and management, group strengthening and improved production of cowpea.

Successful promotion and development of *Alectra* resistant varieties for increased cowpea production among smallholder farmers depends on the human element – the way communities perceive the problem and get organized to address the issue. This is important for project ownership and success.

The intervention undertaken has the following main objectives:

- Training on aspects of *Alectra* biology and how it affects Cowpea plant growth and development.



Fig. 1: Participants at farmer group workshop.

- Conducting a situational analysis of the groups to allow farmers appreciate their situation, problems and challenges with regard to cowpea production and group development.
- Developing a strategy for participatory research and technology development process involving farmers, researchers and other stakeholders.
-

The three activities were started in this quarter and farmers realized their situation and they are ready for a change in the six target project sites in Tanzania and four in Malawi.

- **Assembly of germplasm.** In the first phase, cowpea germplasm was collected from institutions namely IITA, ARI Ilonga, and Plant Genetic Resource Centre (PGRC) - Arusha, where a total of 120 accessions were assembled and screened for Alectra resistance both in the field and screenhouse.

In the second phase, germplasm was collected from farmers in the project target villages namely Mbalawala and Kikombo in Dodoma urban, Msungua and Inkhanoda in Singida rural district in Central Tanzania. Also collections were conducted in two project villages (Mkungugu and Mangalali) of Iringa rural district in the Southern Highlands of Tanzania. In addition also collections were made in villages surrounding the above mentioned project target sites to capture variability.



A total of 106 cowpea landraces were collected and were found almost all of them to have mixed seed colours ranging from white to black, with cream colour dominating. Also they were of different seed sizes from small to large, but large was dominating. These collections are being sorted according to seed colour ready for screening against *Alectra* in

screenhouse.

From farmers views mixed seed colour was not a problem for those who process the cowpea seed for making buns (Bagia in Kiswahili), but traders prefer uniform seed colour (i.e. white to cream). For seed size, farmers have a bigger market for large seeded types.



← Bun (bagia)

- **Capacity building through students' research.** According to the project logframe and deliverables, a number of student studies were proposed in Tanzania (Sokoine University of Agriculture) and Malawi (Bunda College) in areas of breeding and marketing. Since the Project's inception meeting held in Mbeya, one student enrolled for M.Sc. (Agricultural Economics) was approached and has developed a proposal titled: "Assessment of production, marketing and consumption of cowpea in Tanzania: A case study of selected regions in Tanzania." Dr. Joseph Hella from the Department of Agricultural Economics and Agribusiness of the same university will supervise the student the same topic is being also addressed in Malawi at Bunda College by Prof Vernon Kabambe. The questionnaires have been developed and are being pre-tested.

In Malawi, apart from the M.Sc. student, a B.Sc. project student is studying the biomass production of cowpea lines. These lines were supplied by Mr E. Mazuma from Chitedze Research Station. The idea is to find lines that can be used as green manures as well and produce high yields. In addition, some correlation and regression of leaf mass and canopy width will be done to establish an easier way of estimating biomass. We hope in August 2007 another student will accept to study the rotational effects of these lines on maize production and another to screen cowpea for *Alectra* resistance.

🏠 Groundnut breeding (E/S Africa)

- **Disseminating improved groundnut technologies to smallholder farmers in Malawi and Tanzania through on-farm and on-station trials.** The objectives of these trials are to popularize important disease management technologies (including varieties) to small-scale farmers in Malawi, validate recommended cultural practices with specific released varieties and enable smallholder farmers in project areas to improve food security through reduction in Groundnut Rosette Disease (GRD), Early Leaf Spot (ELS), and aflatoxin contamination that are all significant production constraints in the entire ESA region.

In Malawi, a total of 36 on-farm trials (19 in Mchinji and 17 in Nkhotakota districts) were harvested during the months of April and May 2007. Preliminary results from the trials revealed that GRD incidence was reduced by the following practices: planting undertaken with first rains (early planting), at higher plant populations (10 cm intra-row spacing) and when resistant varieties were used. The farmer and research teams also noted that groundnut crop growth was best in plots where water was conserved by use of tied/box ridges and early planting. The team believes that this will reduce aflatoxin contamination, which is reported to linked to end-of season drought. Discussions with farmers have also revealed that variety Nsinjiro (ICGV-SM 90704) is preferred by farmers for market traits, together with variety Kakoma (JL24). Data are currently being analyzed.

In Tanzania, groundnut variety preference trials were planted at 8 sites in Southern Tanzania. The following varieties were identified by farmers for further promotional testing; ICGV-SM 99555, ICGV-SM 95342, ICGV-SM 01706, and Pendo. Pendo is already a released variety in Tanzania – so this evaluation is confirmation of its farmer acceptance. On reaction to diseases, among the Valencia types evaluated at Mnanje village in Masasi District farmers identified ICGV-SM 95732 as tolerant to foliar diseases especially ELS, and ICGV-SM 96677 as good yielder. At Chakama village ICGV-SM 96677 was the best foliar disease resistant variety and ICGV-SM 99537 was selected as the best for yield attributes from the 25 varieties tested. Among the Spanish types, at

Mpeta village farmers identified ICGV-SM 01515 as the best for resistance against ELS, and ICGV-SM 99551 as the best yielder from the 25 varieties tested. Among the Virginia types evaluated at Mikangaula ICGV-SM 03705 was identified as resistant to foliar diseases and RG1 as good yielder.

Thirty-nine nurseries were planted for evaluation at Chitedze Agricultural Research Station under three environmental conditions High Groundnut Rosette Disease (GRD) Pressure, High Early Leaf Spot (ELS) Disease Pressure and under normal conditions (low disease pressure without inoculation).

During the reporting period, harvesting was finalized and data collected on post harvest characters and traits. Preliminary results have shown a number of promising varieties with resistance traits for all the three diseases, GRD, ELS and LLS.

- **On-Farm Seed Multiplication.** Sixteen farmers were involved in groundnut seed multiplication in the two districts of Mchinji and Nkhonkhotakota. Seed multiplication plots were harvested during May and June 2007. A total of over 1444 kg of seed was produced. The farmers involved in seed multiplication will provide the appropriate forum for conducting seed fairs so that other local farmers can access improved groundnut seed and get to know specific groundnut varieties. In Tanzania, three farmer groups each comprising 15 – 22 farmers were involved in on-farm seed production. These groups all in Masasi district produced a total of 3.2 tons of good quality seed of the variety Pendo for dissemination throughout the district.
- **Farmer field days.** Nine Farmer field days were conducted to promote and disseminate promising groundnut production technologies to farmers and collaborating stakeholders in Malawi. Five field days were held in Nkhonkhotakota and four were held in Mchinji, respectively during April-May 2007 (See pictorial below). Three hundred and ninety three farmers and stakeholders attended the field days in Nkhonkhotakota (266) and Mchinji (127).

🏠 Legume best bets (Malawi)

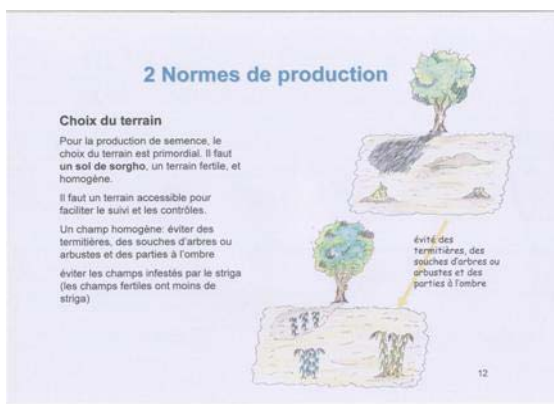
- A planning workshop for the Legume Best Bets Project to Increase Nitrogen and Phosphorous and Improve Family Nutrition was held in Kasungu, Malawi from 15 to 17 February 2007. Detailed work plans and activities were developed based on project objectives and valuable input was received from a wide range of collaborators and stakeholders from Michigan State University, Soils, Food and Healthy Communities Project, World Vision (Malawi), Farmers Union of Malawi, Ministry of Agriculture and Food Security, International Crops Research Institute for Semi Arid Tropics (ICRISAT), and Small Holder Farmers from the two study sites in the Northern Region (Ekwendeni) and Central Region (Kasungu) of Malawi.
- Meetings were also held in project sites of Kaluluma and Chulu Extension Planning Areas between 8 and 9 March 2007. The objective of the meetings was to sensitize governmental and nongovernmental organizations that are operating in the area about the McKnight funded Best Bets project so that our efforts are seen to be complimentary to the ongoing initiatives. The sensitization meeting revealed that PLAN International, Harvest Help Find your Feet, ICRISAT and National Small holder Farmers Association of Malawi (NASFAM) are already operating in the area and are willing to partner with us in areas of mutual interest.

- New farmer research and outreach groups are being initiated in the project areas of Chulu and Kaluluma Extension Planning Areas of Kasungu District, supported by NGOs Local Extension staff farmer research groups from Ekwendeni area and staff from Bunda College.
- Farmer to Farmer Exchange visits were held in the two study sites. On 16 April 2007, two chair persons and two secretaries of farmer clubs from Chulu and Kaluluma Extension Planning Areas (EPA) of Kasungu District in Central Malawi attended a field day in Ekwendeni area of Mzimba District in the Northern Region of Malawi. The first objective of the visit was to observe the soil fertility enhancing technologies being promoted and demonstrated by the participating small holder farmers in that area. The second objective was to enable the visiting farmers from Central Malawi to learn how the Farmer Research Teams are formed under the Soils, Food and Healthy Communities Project (SFHC). The soil fertility improving technologies being promoted include biomass incorporation of legume green manures from Velvet beans (*Mucuna puriens*), Tephrosia (*Tephrosia vogelii*) and Pigeon Peas (*Cajanus cajan*). In addition the farmers were also exposed the doubled up legume intercropping technology that has the promise of boosting soil fertility and maize yields within the shortest possible time. The visiting farmers had an appreciation of the advantages of the Farmer research teams and have used the knowledge gained to improve on their organizational structures. A reciprocal visit was organized whereby five farmer leaders from Ekwendeni went to Kasungu to exchange experiences in farmer group formations, manure composting, management of seed banks, enterprise development, and community based natural resources management, among others. The farmer organization structures are being facilitated by the Malawi Enterprise Zone Association (MALEZA).
- A Baseline Survey was conducted between 29 May and 30 June, 2007, in Ekwendeni, Northern Malawi in seven randomly selected intervention villages of Zulu Gondwe, Daniel Soko, Yotamu Nkhambule, Chipetupetu Chione, Chotha Tembo, Lazaro Jere and Zungwala. The objective of the survey was to determine legume preferences among farmers and the factors that influence their choice. Farmer selection for the survey was based on their involvement in legume seed production under the SFHC Project. Active and non-active farmers were randomly identified for the interviews. After the interviews composite soil samples were collected from legume diversified and maize field in order to establish initial fertility status of the farmers' fields. Soil texture and Ph were also tested in situ. The farmers were also classified according to gender in order to determine the role of gender in decision making. The survey revealed that the most widely grown legumes are groundnuts, pigeon peas, soybeans, tephrosia and common beans. The survey further revealed that grain legumes are grown largely for food consumption with only the surplus being sold. However, the farmers seem to lack reliable market outlets. This baseline survey is a perfect entry for our McKnight Project to address some of these missing gaps. A similar survey is underway in the Central Malawi site of Kaluluma EPA.
- Two postgraduate students, Wezie Mhango at Michigan State University and Austin Phiri at Bunda College, University of Malawi, collaborating on the project, are progressing very well in both course work and research work. Wezie posted a Grade Point Average of 3.85, and results for Austin Phiri are not officially in but are expected to be equally impressive. In May, they will both be conducting participatory research activities in project areas to improve our understanding of the role of multipurpose best bet legumes in improving soil nutrition and consequences of family nutrition. Both students are in the field conducting the baseline surveys and facilitating farmer to farmer exchange visits.

West Africa

📌 Seed systems (W. Africa)

- In Mali the project team completed culinary testing of the five varieties that had been selected with the farmers, based on performance results and general preferences. For evaluating the processing characteristics, cooking qualities, and culinary preferences of the newly introduced sorghum varieties, the villages were the trials are conducted organize a culinary evaluation day. Three teams of women prepare “to” (stiff porridge) from the five test varieties, which includes a local village variety chosen by the women as a control. A fourth team prepares a meal for all the participants. The three women teams evaluated the five varieties at each processing step: visual grain assessment, ease of decortication, ease of milling, the color of the product at each stage, ease of cooking and related traits. One all the three replications of to are prepared, a panel of men and women from the village, of at least 20 persons evaluates all the different plates of “to”.
- In collaboration with the Anbe Jigi project we sampled grains and decorticated grains from each lot, to use for analysis of iron, zink and phytates. This will help to estimate the changes in bioavailability of the minerals from the sorghum grain.
- The results of variety trials were thoroughly analysed during this period, and the sorghum group in Mali was very excited to confirm very clearly, that the short-statured, primarily guinea-race varieties produced significantly higher yields in most locations, and responded better to improved fertility than the local varieties. The two best of these varieties are being inscribed in Malian National Catalogue of Improved Varieties.
- In April and Mai all the groups in the three countries held planning meetings to finalize for each of the groups which activities shall be conducted by whom and where. In the mean time seeds were sent from the various researcher groups to the many villages that are participating in seed production and variety testing activities.
- Farmer groups have received training for seed production. This year in Mali we focused on the pearl millet growing area in northern Mali, west of Timbuktu, where farmers have identified some new very early maturing varieties that they would like to disseminate at a larger scale in their area.
- A manual for farmer managed seed production for sorghum was written and produced in Burkina Faso. The French version being printed, and the translation in one of the local languages spoken in the project area is ongoing.



🏠 Sweetpotato (Burkina Faso)

- **Meeting with technical partners and training producers of Orange-Fleshed Sweet Potato (OFSP) vines.** This training was held in Koupéla on May 3-4, 2007. Participants were 32 producers and seven supervisors from six different provinces (Gourma, Tapoa, Gnagna, Komondjari, Kouritenga and Sissili). These supervisors are agents from decentralized structures of the Ministry of Agriculture in charge of supporting communities for improving agricultural practices; one of which is from the NGO called APRG (Association for improving yield and productivity in the Gourma province). The training was led by one INERA tuber specialist and three HKI gardening program staff.

Subjects discussed during the training were:

- Presentation of the project Vit A Burkina;
 - Techniques of production of OFSP;
 - Exchange between producers on different techniques used in the provinces for production of vines and OFSP;
 - Set up of a network of OFSP vines producers;
 - Identification of the producers for the test to be conducted in each province in 2007.
- **Donation of material to vine producers.** The 20 groups and individuals selected received support in material for the installation of seedbeds for production of OFSP cuttings. The material thus provided is composed of 28 fences, 28 watering cans, 20 pickaxes and 20 shovels.
 - **Identification of the sites for seedbeds and farmer trials.** At the end of the training workshop, five groups and 21 individual producers from 14 different villages in the six provinces were chosen for implementation of OFSP seedbeds and production tests for 2007. In addition to the producers, four schools in the provinces of Gourma and Komondjari will also be associated to these activities.
 - **Establishment of OFSP trials in farmers fields.** During June and July, HKI staff is in the field to support the local producers in the set up of the test of OFSP in the six provinces. Eleven varieties of OFSP are tested with farmers in 14 different villages. During the set up phase HKI team will:
 - Distribute the cuttings;
 - Give technical and practical advices to the producer for implementation of the experimental protocol;
 - Help choose the best field site for the test;
 - Support the set up of the test according to the protocol (cleaning of the field, staking, set up of hillocks, plantation of the cuttings).