IPM CRSP Trip Report

Country Visited: Uganda

Dates of Travel: 4/9 – 4/13/13

Travelers Names and Affiliations: Mark Erbaugh and Sally Miller, The Ohio State University

Purpose of Trip: To participate in the external evaluation panel review of the IPM IL Innovation Lab

Sites Visited: Kampala, NaCCRI and Kabanyolo Agricultural Research Center, Bugoyo Farmer Association

Description of Activities/Observations:

4/10: Arrival 11:30 PM Royal Suites Hotel Kampala
4/11 – 4/12: Regional TC Meeting with EEP member Overholt participating.
4/13: Visit field sites at Namulonge, Kabanyolo and farmer association
4/14: To Nairobi

Training Activities Conducted

<table>
<thead>
<tr>
<th>Program type (workshop, seminar, field day, short course, etc.)</th>
<th>Date</th>
<th>Audience</th>
<th>Number of Participants</th>
<th>Training Provider (US university, host country institution, etc.)</th>
<th>Training Objective</th>
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</thead>
<tbody>
<tr>
<td>TC meeting</td>
<td>4/11 – 4/13/13</td>
<td>EA IPM IL co</td>
<td>6</td>
<td>7</td>
<td>OSU, MU, SUA and KARI</td>
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Suggestions, Recommendations, and/or Follow-up Items:

Mark Erbaugh followed up with a telephone call to Dan Taylor to discuss prioritization and implementation of impact assessment activities. 4.30.13.

List of Contacts Made:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Organization</th>
<th>Contact Info (address, phone, email)</th>
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</thead>
<tbody>
<tr>
<td>Prof. Samuel Kyamanywa</td>
<td>Regional Coordinator/MU School of Agriculture</td>
<td></td>
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<tr>
<td>Dr. Larry Vaughan</td>
<td>VT, Asst. Director of IPM IL</td>
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<tr>
<td>Dr. William Overholt</td>
<td>Univ. of Fla., External Reviewer</td>
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<tr>
<td>Prof. Kallunde P. Sibuga</td>
<td>SUA, Tanzania Coord.</td>
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<tr>
<td>Dr. Monica Waiganjo</td>
<td>KARI, Kenya Coord.</td>
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<tr>
<td>Dr. Zachary Kinyua</td>
<td>KARI, Coord., IPDN-EA</td>
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<tr>
<td>Prof. Margaret Mangheni</td>
<td>MU/School of Agric., Coord., Gender Knowledge</td>
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<tr>
<td>Dr. Jeninah Karungi</td>
<td>MU/School of Agric., Coord. Uganda</td>
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<tr>
<td>Dr. Peter Sseruwagi</td>
<td>Coord., Plant Virus GT-EA</td>
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<tr>
<td>Dr. Jackline Bonabana</td>
<td>MU/School of Agric., Coord., Impact Assessment GT</td>
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<tr>
<td>Mr. Hosea Mtui</td>
<td>SUA, Grad Student</td>
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<tr>
<td>Dr. Mildred Ochwo-Ssemakula</td>
<td>Coord., IPDN-Uganda</td>
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<tr>
<td>Sally Miller</td>
<td>OSU, Coord. IPDN</td>
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10TH APRIL – 13TH APRIL, 2013, ROYAL SUITES HOTEL, KAMPALA, UGANDA

**PROGRAM**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Item</th>
<th>By Who</th>
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<tr>
<td>10th April, 2013</td>
<td></td>
<td><strong>Day 1: Progress reports</strong></td>
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<tr>
<td></td>
<td>8.00am-8.30am</td>
<td>Arrive in Kampala, check in Royal Suites hotel</td>
<td>Ms. Beatrice Nginah</td>
</tr>
<tr>
<td>11th April, 2013</td>
<td>8.30am-8.40am</td>
<td>Registration</td>
<td>Ms. Beatrice Nginah</td>
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<tr>
<td></td>
<td>8.40am-9.00am</td>
<td>Welcome Remarks and Introductions</td>
<td>Prof. Samuel Kyamanywa</td>
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<tr>
<td></td>
<td>9.00am-9.30am</td>
<td>Overview of IPM Innovation labs in EA</td>
<td>Dr. Mark Erbaugh</td>
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<tr>
<td></td>
<td>9.30am-10.30am</td>
<td><strong>BREAK TEA</strong></td>
<td>Dr. William Overholt</td>
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<tr>
<td></td>
<td></td>
<td><strong>Progress Reports from Regional Programs by Country</strong></td>
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<td></td>
<td></td>
<td>10:30am-10:50am Progress Report - Tanzania</td>
<td>Prof. Amon Maerere</td>
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<tr>
<td></td>
<td></td>
<td>10:50am-11:10am Progress Report - Kenya</td>
<td>Dr. Monica Waiganjo</td>
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<td></td>
<td></td>
<td>11:10am-11:30am Progress Report - Uganda</td>
<td>Dr. Jeninah Karungi</td>
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<td></td>
<td></td>
<td>11:30am-11:50am General discussions</td>
<td>All</td>
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<td><strong>Progress Reports - Global Themes</strong></td>
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<tr>
<td></td>
<td>11:50am-12:05pm</td>
<td>IPDN Global Theme</td>
<td>Dr. Zachary Kinyua</td>
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<tr>
<td></td>
<td>12:05pm-12:20pm</td>
<td>Plant Virus Global Theme</td>
<td>Dr. Peter Sseruwagi</td>
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<tr>
<td></td>
<td>12:20pm-12:35pm</td>
<td>Gender Global Theme</td>
<td>Dr. Margaret Mangheni</td>
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<td></td>
<td>12:35pm-12:50pm</td>
<td>Impact Assessment Global Theme</td>
<td>Dr. Jackline Bonabaana</td>
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<td></td>
<td>12:50pm-13:05pm</td>
<td>General Discussion</td>
<td>All</td>
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<td></td>
<td>12:45pm-1:00pm</td>
<td>Poster Session</td>
<td>All</td>
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<td></td>
<td>1:05pm-2:00pm</td>
<td><strong>LUNCH</strong></td>
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### Day 2: Technical Committee Meeting and Visit to USAID mission

**12th April, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Participants</th>
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<tbody>
<tr>
<td>8:30am-10:30am</td>
<td>EEP visit to USAID Mission</td>
<td>EEP members, Site Chair &amp; Regional Coordinator</td>
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<tr>
<td>8:30am-10:30am</td>
<td>Break into country groups and work on year V plans</td>
<td>Country and GT members</td>
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<tr>
<td><strong>10:30am-11:00am</strong></td>
<td><strong>BREAK TEA</strong></td>
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<tr>
<td>10:30am-1:00pm</td>
<td>Presentation of work plans per country (Uganda, Kenya &amp; Tanzania) and Global Theme (PVD, IPDN, GK, IA)</td>
<td>Country and GT members</td>
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<tr>
<td><strong>1:00pm-2:00pm</strong></td>
<td><strong>LUNCH</strong></td>
<td>Country and GT members</td>
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<tr>
<td>2:00pm-3:00pm</td>
<td>Finalise presentations of work plans</td>
<td>Country and GT members</td>
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<tr>
<td>3:00pm-3:15pm</td>
<td>Setting the parameters (papers to be published, impact to be assessed, etc) for wrapping up year IV</td>
<td>Country and GT members</td>
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<tr>
<td>3:15pm-4:30pm</td>
<td>Discussions on:</td>
<td>Country and GT members</td>
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<tr>
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<td>• Discuss the planning for the proposed International IPM symposium</td>
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<td>• Discuss plan for the USAID evaluation</td>
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<td>• Developing a strategy for a collective manuscript – esp. for tomato for the three countries</td>
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<td><strong>6:00pm</strong></td>
<td><strong>Cocktail</strong></td>
<td>ALL</td>
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**13th April, 2013**

**Day 3: Field visit/Excursions**

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<tr>
<th>Time</th>
<th>Activity</th>
<th>Person</th>
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<tbody>
<tr>
<td>9.00am-12.00 noon</td>
<td>Visit to experimental sites</td>
<td>Dr. Jeninah Karungi</td>
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**14th April, 2013**

**Day 4: Depart for Nairobi**

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**MINUTES OF THE REGIONAL IPM CRSP TECHNICAL WORKING COMMITTEE MEETING HELD AT ROYAL SUITES IN KAMPALA, UGANDA ON APRIL 11-12, 2013**

Members present:

1. Dr. Mark Erbaugh Site Chair, IPM CRSP-EA
2. Prof. Samuel Kyamanywa Regional Coordinator, IPM CRSP EA
3. Dr. Larry Vaughan
4. Dr. Bill Overholt
Minutes 2013/01/01: Communication from the Chair

Prof. Kyamanywa opened the meeting at 8:55am with a request for a word of prayer. Dr. Monica Waiganjo accepted and offered a prayer.

Welcoming remarks:

- Prof. Kyamanywa welcomed members to the technical committee meeting and introduced all members present in their various capacities with respect to positions held in the IPM CRSP.
- He then highlighted the focus crops of the IPM CRSP and briefly summarized the program for the meeting, which included a visit to the USAID Mission in Uganda and field visit to experimental sites where IPM CRSP-funded research was being done.
- Prof. Kyamanywa noted that posters had been put up to highlight some of the work that is currently being done by scientists under the East African Site of the IPM CRSP.
Prof. Kyamanywa then invited Dr. Mark Erbaugh to give an overview of IPM CRSP in East Africa (IPM CRSP EA).

Minutes 2013/01/02: Overview of IPM Innovation Labs in East Africa

Dr. Mark Erbaugh:

- Welcomed Bill and Larry to the Year IV Technical Committee (TC) Meeting and highlighted the early positive collaboration between the IPM CRSP in Uganda and Bill (then at ICIPE) together with Dr. Kyetere (who headed the Cereals Program at NARO, Uganda) and also with IITA. He indicated that the linkages with ICIPE had been maintained through Bill’s former ICIPE counterpart, the late Dr. Charles Omwega. He further reminded members of Larry’s participation at the EA-TC meeting in Murangu, Tanzania in 2009.

- Reminded members that the last TC meeting was held in Morogoro, Tanzania in March 2012 and indicated that the current meeting was the 6th TC meeting.

- Presented objectives of the TC meeting as producing a mid-term progress report; reviewing site progress and discussing emerging challenges; reviewing manuscripts; and discussing work plans for year 5. Finally, arrangements for the visit by the USAID Review team to the EA site would also be discussed.

- Informed members of the review of the CRSPs that had been done by BIFAD, which represents universities and other actors working with USAID. He acknowledged that the report asked for more science to emanate from the CRSPs but that the USAID Missions are more interested in technology dissemination and impacts. USAID also called for more agility within the Program, in order to quickly respond to changing needs of target groups.

- Informed members of the change in name of the IPM CRSP to IPM IL (Innovation Labs) and further indicated that all food security issues were now being handled under the Feed the Future Initiative of USAID.

- Acknowledged the good performance of scientists in using and accounting for advanced funding. He acknowledge the challenges he had faced in getting graduate students to the USA because of failure to meet the GRE requirement. These fund had been reallocated for four people from the region to participate in short-term training in US.

- He reported achievements in capacity building through exposure of scientists including Sylvia Kuria who attended the Trichoderma workshop in India, training scientists in diagnostics conducted at SUA - Morogoro in May 2012; and 6 people who attended the International Plant Virus Epidemiology Symposium in Arusha in January 2013.

- Noted that IPM CRSP EA has been and continues to contribute directly to the goals of the Feed the Future Initiative that include reduction of malnutrition and poverty, gender equity, environmental and economic sustainability.

- Highlighted the collaborating partners under the IPM CRSP EA in the USA (OSU and VT), the Global themes (IPDN, Plant Virus, Gender Knowledge, and Impact Assessment)
and regional institutions (Makerere University, KARI, SUA, TaCCRI and NARO among others).

- Reminded members of the 2 primary objectives of the IPM CRSP EA, which were developed at the proposal preparation meeting in Nairobi in 2005.

- Under objective 1 (Building a regional model of collaborative IPM research, training and knowledge dissemination) Dr. Erbaugh indicated the importance of the TC meetings, which facilitate sharing of information and collaboration. He further informed members that IPM CRSP EA holds 2 meetings a year, in August and March. Dr. Erbaugh commented that prompt budgetary reporting exhibited by the EA IPM IL partners was a measure of capacity building. On capacity building, he further informed members of trainings that had been done in the region, including scientists such as Sylvia Kuria at Makerere University, a Kenyan student to be trained on BBW in Uganda; a Tanzanian student to be trained on coffee wilt in Uganda; and agro-input dealers trained in safe pesticide handling and application in collaboration with Makerere University in Uganda.

- Indicated that the collaboration within the site had taken different forms including the exchange of germplasm e.g. KPF4 from Kenya to Uganda, MT-56 from Uganda to Kenya.

- Informed members that the global themes were being integrated into the IPM CRSP EA in line with the emphasis on a multidisciplinary and multi-institutional approach to its operation. He, however, noted that the emphasis on outreach is emphasized by targeting farmer groups.

- On objective 2 (Development of IPM research programs for higher value horticultural crops), Dr. Erbaugh reported the target crops for the program were tomato, coffee, passion fruit, onion and hot pepper which had been identified at the strategic planning meeting in 2005. Tomato was still the most highly ranked small holder commercial crop yet many constraints to production were evident and farmers relied heavily on pesticides in management. The use of a market-oriented approach that involved working with commercial growers had improved the impacts on technology development and identified the need for farmer education and evaluation of farmer knowledge against what is known in order to allow a better appreciation of the constraints farmers faced. Using this process, Dr. Erbaugh indicated that over time, technologies for management had evolved that include 7 different strategies including varietal screening and registration of resistant variety MT-56, grafting, staking, mulching, soil solarization, use of high and low tunnels and reduced and timely application of pesticides. These tactics are used in different combinations at the different EA sites.

- Highlighted the genesis of technology development at the EA site, from mulching and staking of tomato in Uganda through the use of high tunnels in Kenya and grafting tomato, which has been commercialized in Kenya and will be considered in combination with high tunnels in Tanzania. He noted that research on specific crops would be reported by the various coordinators. In rolling out the Ugandan model of IPM CRSP in East African region, Dr. Erbaugh acknowledged that challenges had emerged in addressing the number of crops with available funds.
- Highlighted the challenge of integrating the different Feed the Future Priorities of the 3 countries into a coherent regional program.
- Informed members of the visit by the team of external evaluators to the IPM CRSP EA.

Minutes 2013/01/03: Country reports

1. Progress Report: Tanzania (Prof. Kallunde P. Sibuga)
   - Presented highlights from research done in Tanzania from October 2009-Sept 2013.

   **Observations**

   **Tomato:**
   - The scientists need specify what type of fungicide combination was being used because Ridomil is specific to Oomycetes while mancozeb is broad spectrum.
   - The reduction in cost of production is what makes the story exciting and should be highlighted.
   - Ridomil has no cancer-causing properties but Mancozeb is a type 2 carcinogen and should not be used close to harvest; the pre-harvest period of two weeks should be observed.
   - The issue of spraying fruits to control post harvest losses caused by *Alternaria* and *Phytophthora* needs to be addressed either by highlighting the problem in the media, or using a placebo, or training the growers to select what they sell by throwing out diseased fruit, or educating the farmers about the right stage of harvesting as critical in determining the shelf life.

   **Onion:**
   - Into minimizing loss of data through stealing and other field problems, sampling should be done early to measure differences before maturity.

   **Coffee:**
   - Data on coffee is raising new issues with respect to the response of *Antestia* bug to shading and needs close scrutiny.
   - There is a need to focus the work on using lures in coffee insect pest management so as not to spend too much time on these concoctions without field application of the results.
   - The data on disease under the shading needs to be analyzed and made known to Sally to present it at an upcoming coffee meeting.
   - The idea of using parasitoids to manage coffee pest should be explored as they have been effective with mealy bugs.

2. Progress Report: Kenya (Dr. Monica Waiganjo)
   - Made 3 presentations on the overview of IPM IL program in Kenya, and results from tomato and onion research.
**Observations:**

**IPM IL Overview**

- Miriam Otipa should be fast-tracked to ensure that she finishes her PhD studies. Dr. Waiganjo indicated that her dissertation was close to being submitted for examination.

**Tomato:**

- The mite affecting tomato is *Tetranychus bunchii*; ICIPE has imported a parasitoid, which has not yet taken effect, IPMCRSP should collaborate with ICIPE on studying impact.

- It is important to recognize that high tunnels is an IPM tool because the insect-proof netting excludes most of the insects e.g. whiteflies as well as fungal spores. The exclusion door keeps out flying insects and footbath keeps out soil contamination. With grafting and solarization, this makes for an effective IPM package.

- It is important to solarize the soil in the high tunnel and combined with grafting is an integral part of this package.

- The safety issues of using *Solanum incanum* as a root stock needs to be examined although it is known to be a medicinal plant used to spice up beef stews in Kenya.

- Should use a selective media within and outside the tunnel to confirm whether spores are really being excluded by the tunnel. There is no scientific proof but comparatively very low disease incidence has been observed.

- If you have *Clavibacter* in Kenya, grafting could fail if you are not sanitizing tools after every graft. Sodium hypochlorite is being used to disinfect the tools.

- In promoting grafting as a business for farmers there should be efforts made to target groups with respect to gender or disadvantage (handicapped) so that the results are two-pronged. IPM CRSP needs to put aside funds for this purpose. A check list will be shared later that attempts to do this.

- Larry: On the potential of farmers raising their own *Trichoderma* for inoculation, there is need for a species that works before disseminating to farmers. Particularly there is a need to verify why *Trichoderma* would work against *Ralstonia*. Companies are marketing these products yet their efficacy has not been tested. The science needs to be understood. *Trichoderma* has various effects on fungi and induces plant resistance. However, this level of resistance cannot stand against *Ralstonia*. *Trichoderma* strains work differently and its effect needs to be verified in the field as well as confirming root colonization. M Sylvia’s thesis highlights some of these aspects but farmers in desperation are using products that have not been validated.

**Passion fruit:**

- If diagnostic kits are being developed based on molecular kits which Miriam worked on while at OSU, they should be packaged in a way to target a wider audience.

3. **Progress Report: Uganda (Dr. Jeninah Karungi)**

   - Presented highlights of research from 2009-2013, highlighting participation of crop PIs.
**Observations:**

**Passion fruit:**
- The reports of the undergraduate students should be shared because similar work is being done by students in the USA.
- Didas Asiimwe’ cultures which are in the custody of Mr. Gerald Kyeyune (Principal Technician, School of Agricultural Sciences-Makerere University), should be given to Sally; if they are not available the permits should be mailed back.
- Why are the a’s and b’s in collar rot host screening ranking from the lowest to the highest? Ranking can be determined by the scientist.
- New management packages to give to the farmers are currently underway.
- Technoserve is currently working with KARI to commercialize KPF4 through funding for multiplication and dissemination of clean planting material (seedlings).

**Hot pepper:**
- Because of the work at Mobuku irrigation scheme has stalled due to scheme management problems, the work on hot pepper in Mobuku should be terminated and funds should be re-channeled to the Coffee twig borer - a pressing new problem emphasized by USAID/Uganda, where coffee is a Feed the Future priority crop.

**Coffee:**
- The traps should be evaluated for both attacking the coffee twig borer and killing it. Furthermore the use of a fungus to control CTB should be explored.
- Prof: CTB was new and the activity was initiated to establish whether there was a front and if sanitation could work. However, there seems to be renewed emphasis on the importance of the pest so it is important to pursue. Mark agreed that it was timely to work on the coffee twig borer.
- The impact of FFS in Mbale has been felt and there are testimonies. Nevertheless there is need for properly designed adoption studies, with proper thought given to monitoring dissemination efforts in order to come up with information that is publishable. Mark will discuss impact assessment with Dan Taylor upon his return and before Dan goes to EA to work with Jackie. We may not have time to handle all crops but target those with important technologies. Dan Taylor and Jackie can concentrate on using economic surplus impact assessments.

**Tomato:**
- The traders in Kenya indicated that they do not prefer MT-56 while in Uganda MT-56 is preferred in certain markets but others prefer varieties with a longer shelf-life. However, the Kenyans are using MT-56 very successfully as a BW resistant root stock for grafting.

4. **Progress Report: IPDN (Dr. Zachary Kinyua)**

**Observations:**
- The fact sheets were targeting agricultural extension and farmers.
- The work done on IPDN in Uganda was through the AFSI and so was the approach used.
- For remote diagnosis of problems using photos, there is need to train farmers in photography and sending data. The uploading process is still slow even in the U.S.
- Ring testing is going to take place within the next nine months, even if it means hiring someone to do the testing. Other labs, apart from Mildred’s lab, should be brought on board, depending on the target pathogen.
- The publications you presented are part of the global theme and are associated by virtue of use of technologies that have been developed by IPDN GT. These would then be considered spill over benefits.
- Before the SOPs are widely disseminated there is need to confirm they are available for publication before circulating them. They could first be posted in draft format on the internet website for comment. It is also important to ensure that the SOP has not integrated parts of protocols from other scientists if they are to be published.
- On the repetitive nature of the SOPs, the emphasis should be avoiding plagiarism and adjusted to fit into the regional context.

5. **Progress Report: Gender (Dr. Margret Mangheni)**

   Highlighted the lack of response from Tanzania. Prof. Sibuga promised to follow up.

   **Observations:**
   - Culture seems to play a big role and it seems science is not able to change culture. What needs to change is an appreciation for the different roles played by women and men.
   - You have a list of factors that constrain women’s participation. Have you gone out and asked women and men what they think so as to derive statistics to add depth? The key highlights are presented in a poster although there were issues of lack of ownership of certain technologies such as pruning infected twigs by men for burning by women. In Eastern Uganda, the distance to demonstration sites also hindered participation by women.
   - The gender coordinators do not need it except as a tool to disseminate, especially to non-social scientists within the CRSP where there is a real need. Pf. Mangheni: Working on a single crop at particular locations, barriers can be identified and strategies developed to overcome these in order to inform the regional projects in a more informed manner. Merger between the Gender GT and regional projects into instruments that would add value was proposed.


   **Observations:**
   - In using “Willingness to pay to reduce pesticide usage in Uganda” it is however important to note that standard pricing does not work on assessing willingness to reduce or consume a product with less pesticide. It is a methodology used by economists to give an indication for potential demand for a product, which in this case is reduced pesticide.
- There seems to be a lot of emphasis on scotch bonnet. If the crop is not going anywhere we should consider refocusing resources elsewhere.

- An assessment which will be ranked by farmers should be done on available technologies that have been disseminated. We should target technologies that were adopted and find out why these were adopted or not. These include resistant varieties i.e. MT-56, AVRDC varieties; mulching and staking. Has the cost of accessing materials and putting them into place reduced profits compared to the other technologies? Has that changed? This will depend on the materials used. In Uganda, the farmers are not keen on staking while Kenya had taken up the technique and are using cheaper materials, and staking plus mulching were cost effective. There is a need to study interest in these technologies. This information was recorded in the questionnaire. Members acknowledge differences in attitude and intensity of cultivation in Kenya compared to Uganda. It was suggested that the technologies be promoted in Uganda with the view of reducing pesticide use.

- On coffee, stem wrapping was also found effective but is it cost effective? It depends on the labor requirement, which reduces farmers’ profit. In Uganda, farmers had adapted the technologies to make it easier for them. This information needs to be highlighted. We need to concentrate more on impact assessment in the final year.

General:
There is skewing of activities on global themes towards the countries from which the Coordinators originate. Are there efforts for Kenya and Tanzania? The level of funding does not allow resources to cover all countries. Contact people were selected in different countries to pick up activities to be done under the global themes. There are differences in global themes with respect to willingness to cost-share with the regional program. There was more alignment with the regional programs in the second phase. Mark: However, there were baseline studies done for different crops in the different countries.

Kinyua: Is it possible to roll out impact assessment to cover all the activities? Mark: Resources do not allow so we need to prioritize and use an integrated approach using a local instrument that would be adapted. Prof.: That was the plan for the region except the turn-over of socio-economists in Kenya has been high. In Tanzania, the socio-economist was a student. Prioritization is important in further discussions in the way forward. Larry: Target the winning technologies in the region.

Agreed that:-

- Adoption studies be conducted for all the technologies that have been disseminated and Dr. Mark Erbaugh in consultation with Dr. Taylor and Bonabana should provide the guidelines. The budget for these activities should come from the regional program and each country must budget for this activity.

- Economic surplus studies to be conducted on key IPM technologies. Two technologies will be subjected to this analysis in each country. Dr. Jackline Bonabaana and Prof. Daniel Taylor will take care of this activity and will be supported by the Economic Impact Global Theme.

7. Progress Report: Virus Global Theme (Dr. Peter Sseruwagi)
**Observations:**

- Sue and Gilbertson should review the SOP although there is still room for wider review.
- There is need to post the SOPs for wider review; however, they should be cleaned up and sent to Sally for review on plagiarism first. If there are ideas on approaches to use for subsequent review these should be shared.
- After the India meeting, it was agreed that IPM CRSP EA reviews virus work done so far on different crops and see how to measure the impact of the technologies developed to advise management. In addition, seed being planted needed to be clean. Management is important but we need to know what we are dealing with. If we have tools used to identify Tomato mosaic virus in Uganda on tomato viruses, why not use the same in Kenya and Tanzania? The important virus in Tanzania may be different. In Kenya, this will not be done because the emphasis is on passion fruit then. Sally: You mentioned Geoffrey’s work on the use of sodium tri-phosphate in virus elimination. Why not go this route? Has vector control ever been effective in viral disease management? For whiteflies, it has been done.
- In Kenya, where passion fruit is intercropped, woodiness virus is not as bad. Non-hosts provide alternate hosts for the virus.
- The problem is the lack of a seed system for vegetatively-propagated crops.
- If you are interested in getting seed from AVRDC, you will need to pay for it.
- We have been told to be more agile and there is a new disease on maize (lethal leaf disease). Mikocheni is interested in working on it. There is a lot of work going on in Kenya. There is interest in working on it, with BMGF willing to fund work on plant viruses.
- CBSD is a serious disease but because of variations in incidence and priority of the crop, it complicates working on the constraint under IPM CRSP. Is there a different approach we could use say through invasive species? Bill: This approach usually waits until the problem has gone very far.
- The discussion should continue on how Peter can work with him on cassava viruses. While viruses are not a major problem the threat is there and prevention is key. Mark: There is a lot of money being invested on cassava research and IPM CRSP cannot compete; we should concentrate on the niche in vegetable crops.

**Minutes 2013/01/04: Proposed International IPM Symposium**

Discussed and agreed that:

a. The IPM IL EA program organizes an international IPM conference for Sub-Saharan Africa in which IPM CRSP results from all the IPM CRSP programs would be disseminated.

b. The Regional Co-coordinator writes to the IPM CRSP management entity informing them of this decision and seeks their support.

c. The country coordinators, Dr. Mildred Ochwo and the Global Theme Coordinators, will initially constitute the Organizing committee.
d. The Conference should be held between 8<sup>th</sup> and 12<sup>th</sup> of September 2014.

e. IPM IL EA should budget for supporting the conference venue; while the organizing committee and the ME should help request programs to support their scientists to attend the conference and pay registration.

f. The 1<sup>st</sup> announcements should go out in July 2013.

**Minutes 2013/01/04: The External Evaluation Panel from USAID.**

Members were informed that the USAID Washington Office had set up a team of three consultants to conduct an external evaluation of the IPM IL activities. The team was comprised of Dr. James Litsinger, Prof. Pappu Han, and Prof. J Star. It was agreed that the schedule for the EEP would be as follows

a) Team arrives in the morning of 18<sup>th</sup> April 2012, and in the afternoon meet the USAID team.

b) Between 9 am to 1 pm the team meets with IPM CRSP scientists in Uganda.

c) Between 1:00 pm to 2:00 pm the team goes for lunch.

d) Between 2:00 pm and 6:00 pm the team visits tomato experiments at Kabanyolo, then goes to Namulonge to see the Passion fruit experiment, then proceeds to Kiwenda to visit a tomato farmer group.

It was agreed that the regional coordinator would give a power point presentation, while the scientist would display all the posters they have developed over the project duration. In the presentation, the regional coordinator would try and address the issues in the TOR for the consultant.