

Feed the Future: Innovation Lab for Integrated Pest Management Trip Report

Country(s) Visited: Ethiopia

Dates of Travel: July 7-24, 2017

Travelers' Names and Affiliations:

Daniel Sumner

IPM Innovation Lab management Entity

Assistant Director, Women and Gender in International Development

Office of International Research, Education, and Development (OIREED)

Virginia Tech

Purpose of Trip: To attend the IPM Innovation Lab Technical Advisory Committee Meeting and participate in accompanying field trips; attend the Fall Armyworm awareness and management workshop; meet with Parthenium program staff to discuss planned gender research activities and train them in social science research methods; conduct a Rapid Gender Assessment in one community where the Parthenium project is currently rearing and releasing the two bio-control agents; and discuss the potential for additional follow-on gender research that will be implemented by the Parthenium project team in September.

Sites Visited:

Ethiopia: Addis Ababa, Wollenchiti, Hawassa

Executive Summary:

This trip included participation in Management Entity sponsored meetings and workshops as well as gender research for the Parthenium project. Daniel Sumner (Assistant Director for Virginia Tech's Women and Gender in International Development Program) conducted a Rapid Gender Assessment, with the support of the Parthenium project team, in the community of Wollenchiti of Boset Woreda, Ethiopia. Over 5 days, the team conducted 8 semi-structured individual interviews, one Focus Group Discussion (FGD), 5 key informant interviews, and one participant observation activity.

Description of Activities/Observations:

Activities

Technical Advisory Committee and Program Coordinating Committee Meeting:

(See detailed description below in Trip Schedule)

Fall Armyworm Awareness and Management Workshop:

(See detailed description below in Trip Schedule)

Rapid Gender Assessment:

Throughout the RGA, we interviewed 17 individuals (15 women and 2 men). RGA activities included semi-structured individual interviews, FGDs, key informant interviews, and participant observation.

Previous research by the project has investigated the gendered economic and health impacts from Ethiopia's Parthenium infestation, with the results suggesting that women, particularly those from female-headed households, are vulnerable to the direct and indirect impacts of Parthenium infestation. As such, during this assessment the semi-structured interviews and the FGD were conducted exclusively with female farmers to further document the specific ways in which Parthenium infestation disproportionately affects women. Female respondents were purposefully selected, using snowball sampling, based on the household's proximity to the project's rearing facility and participation in agricultural production (grain and/or vegetable production). Key informants were purposefully sampled and included model farmers in the community, municipal leaders, and the local development agent.

Semi-structured individual interviews lasted about 1 hour and focused on three principal themes: 1) Division of labor – Women's, men's, and children's contribution to livelihood security; 2) Women's participation in decisions about household income; and 3) Beliefs and Perceptions regarding Parthenium contaminated milk. The interviews included opening demographic questions about the respondent and her household.

The FGD focused on the same themes from the individual interviews and participants were purposefully selected with the assistance of the local development agent, including women from male and female-headed households.

Trip Schedule

July 9, 2017: Landed in Addis Ababa and arrived at the Harmony Hotel.

July 10, 2017: First day of the IPM Innovation Lab joint meeting of the Technical Advisory Committee (TACT) and Program Coordinating Committee (PCC). Dr. Muniappan (IPM IL Director) opened the meeting, welcoming everyone to Addis Ababa and gave a presentation detailing the activities and achievements of the IPM IL since the last meeting in July 2016. Next, IPM Innovation Lab's Agreement Officer (AOR) John Bowman, USAID's Faith Bartz Tarr, and Virginia Tech's Guru Ghosh made remarks regarding the accomplishments of the IPM Innovation Lab, how the lab could support broader development efforts in Ethiopia, and the role of Virginia Tech as a global land grand leading the IPM Innovation Lab, respectfully.

After a coffee break, Mr. Daniel Sumner (Gender Research Associate with the IPM IL ME) presented on the role of gender in IPM, including a detailed description of the IPM Innovation Lab's vision for gender integration and gender research. He emphasized how the individual project principal investigators (PIs) are responsible for identifying the focal areas for the gender research activities in their projects, but also reiterated that he is available to support projects with that process by helping to formulate research questions and providing feedback on developed research instruments and strategies.

After lunch, the PIs gave their project presentations. Each PI presented on what they have accomplished in the last year and highlighted the achievements and challenges. They then took questions from the other PIs and members of the TAC.

After the PI presentations, Bowman delivered a presentation, explaining the structure of the Feed the Future initiative and discussed the major challenges and opportunities for the coming year.

July 11, 2017: When the meeting restarted in the morning, the TAC and PCC separated for their meetings. Afterwards, both groups came together to share their thoughts with one another. The PCC noted that they were worried about funding and that they wish they had had more time at the meeting the day before to ask more questions about one another's presentations and hear about what they were doing well. The TAC discussed each project and explained which they saw as weaker and stronger and gave suggestions to the PIs for improvements.

After Muniappan closed the meeting by thanking the participants and the ICIPE organizers, everyone departed Addis Ababa for Wollenchiti to visit one of the biocontrol agent rearing facilities managed by the Parthenium project. Wondi Mersi, area farmers, the local development agent, and the region's crop protection coordinator, welcomed the

TAC members, project PIs, and members of the IPM Innovation Lab ME. Mersi introduced the Parthenium project staff and made presentations to Muniappan, Ghosh, and Bowman. Then Mersi briefly explained the work that goes on at the facility and the project staff led everyone through the rearing process for the two-biocontrol agents (*Zygogramma* and *Listronotus*), showing them the different greenhouses and equipment used. Mersi answered questions from the visitors regarding the impact of Parthenium on agricultural production in Ethiopia and the rearing procedures and equipment utilized at the facility.



(Left) Dr. John Bowman and model farmer Amelework Gudeta
(Right) Dr. Wondi Mersi describing the on-going activities at the rearing facility

Then the group traveled together to Debere Zeyt to stay overnight at the Kuriftu resort.

July 12, 2017: The next morning, the group left early for the long drive to Hawassa to visit field trials implemented by the Rice, Maize, and Chickpea IPM and Vegetable Crops IPM In East Africa projects. After lunch, the group attended a farmer field day hosted by the Rice, Maize, and Chickpea IPM Project near Hawassa. Tadele Tefera, the PI of the project, presented the farmers with certificates of achievement. Then the group went to the field where farmers gave short talks, with translation, on the success of push-pull on corn in their fields.

July 13, 2017: The next morning, the group went to Hawassa University to hear a talk from Dr. Ferdu Azerefegne, an entomologist at Hawassa University and partner with the Vegetable IPM in East Africa project. Dr. Azerefegne, briefed the group on the ongoing research activities. After the presentation, the group departed for Addis Ababa, with a stop after lunch to visit one of the Vegetable Crops IPM In East Africa project's field sites.

July 14, 2017:

Sumner met with Wondi Merisi over breakfast to discuss the proposed RGA and finalize the logistical details. Dr. Mersie offered the assistance of the Parthenium project in conducting the research.

At 9am the IPM IL's Fall Armyworm Awareness and Management workshop began at the Harmony Hotel. The workshop started with opening remarks by Muniappan, Tefera, Stephen Morin, Bowman, and Guru Ghosh. Muniappan then invited all the participants to introduce themselves by organization. The morning session of the workshop included an overview by B.M. Prasanna from CIMMYT talked about the fall armyworm and challenges. Then there were country reports from Ethiopia, Kenya, Niger, and Tanzania.

After lunch, farmer case studies from Ethiopia and Kenya were presented. Fayad presented on the distribution and taxonomy of the fall armyworm. Tadele presented on the Grains IPM in East Africa project and monitoring pheromone traps. L.R.M. Bhanu presented on pheromone traps produced by her company. Muniappan presented on the biology and host plants. Abhijin Adiga presented on the spread of the fall armyworm and modeling opportunities. R. Srinivasan presented on host plant races and Prasanna presented on host plant resistance.



Participants at the FAW workshop, including HE Dr. Eyassu Abrha, the Ethiopian Minister of Agriculture

July 15, 2017: The meeting continued. The Ethiopian Minister of Agriculture, H.E. Dr. Eyassu Abrha, attended the morning section of the second day. He addressed the participants on the danger the FAW poses to Ethiopia and how important it is to have workshops like this one to help address the problem. Next, Winfred Hammond from FAO presented on FAO programs for FAW in Africa. Then Muniappan presented on physical, cultural, and biological control, along with Malick Ba. Laouali Amadou presented on FAW in Niger and the potential of a local parasitoid that has parasitized FAW in the lab. Then two students presented on their FAW research and Menale Kassie presented on the economic impact of FAW.

After lunch, the workshop split into three groups to come up with recommendations on FAW. From the groups and following presentations, the IPM IL came up with a list of recommendations:

They are:

- Integrate cultural, physical, chemical, and biological controls with host plant resistance in management of FAW.
- Survey and document natural enemies of the FAW in East Africa.
- Evaluate the efficacy of the local larval parasitoid *Habrobracon hebetor* on FAW.
- Evaluate the efficacy of the local egg parasitoid, *Trichogrammatoidea armigera* on FAW.
- Evaluate the efficacy of other local natural enemies of FAW.
- Screen and identify the correct pheromone lure combination for attraction of FAW strains in East Africa.
- Screen insecticides included in the PERSUAP for efficacy and safety under local conditions.
- Governments should consider fast track registration of pesticides for control of FAW.
- Conduct FAW host preference and host range studies in East Africa.
- Collaboration within local governments, private companies, and international agencies.
- Integrate management technologies developed for FAW in the IPM package developed for maize and other crops in East Africa.

The workshop closed with thanks to everyone.

July 16, 2017: Rest day in Addis Ababa – the day was spent catching up with emails and reviewing the research materials for the RGA.

July 17, 2017: Sumner traveled with Mr. Tesafy Amare and Ms. Lidya Alemayhu to Wollenchiti to finalize logistical details for the RGA. Sumner conducted a training on mixed methods research with the field team (Tesafy Amare and Lidya Alemayhu) to

familiarize them with the methods utilized in the Focus Group Discussion (FGD) and individual interviews

July 18, 2017: Sumner conducted key informant interviews with model farmers and the local development agent. Revised the individual interview and FGD guide.

July 19, 2017: Conducted one FGD with 14 female farmers in Wollenchiti and interviewed one female farmer

July 20, 2017: Interviewed four female farmers and conducted one key informant interview.

July 21, 2017: Interviewed four female farmers

July 22, 2017: Data Analysis and Action Plan Write-up

July 23-24, 2017: Sumner returned to America.

Summary of Preliminary Findings:

Labor – Women’s, Men’s and Children’s Contribution

- Farmers are keenly aware of the multiple ways in which Parthenium has negatively affected agricultural livelihoods in the community, noting the additional labor burden required to manage Parthenium in agricultural fields, grazing lands, and house-lot areas.
- Manual control (slashing, uprooting, burning, etc.) remains the principal method for managing Parthenium; however, chemical methods (2.4 D) are available and utilized by farmers as well. The cost associated with chemical control does prohibit widespread utilization.
- For Parthenium all adult household members have to be mobilized to manage the weed, however, as with other activities within the farming household, there is a gendered division of labor. Generally, women are not strong enough to uproot the older more established plants. Women’s primary responsibility is to collect and gather the uprooted Parthenium into a pile for burning. Clearing Parthenium within and around the house-lot compound is also women’s responsibility because as one respondent noted, “Women are always around the house”.

- As compared to the past, farmers now heavily rely upon hired labor and community labor exchanges, in addition to family labor, to help clear Parthenium. A household's ability to hire labor is relative indicator of wealth. Additional costs associated with hiring additional labor depends upon 1) the size of the farm and 2) the severity of the Parthenium infestation. Costs to hire an additional laborer can range from 90 ETB – 100 ETB (3.8 – 4.3 USD) per day worked. For smaller farms, a household may hire 20 laborers for 1 day during the peak weeding season.
- There is a slight preference to hire women. In the words of one respondent, “women are more dedicated workers and men are usually too busy on their own farms to hire their labor out”.
- While all household members participate in managing Parthenium, the additional labor burden disproportionately affects women, because of their other multiple responsibilities in the household.
 - It takes longer to clear Parthenium, which in turns affects the amount of time women have to complete their other responsibilities within the household, ie. cooking and cleaning. As such, women respondents reported that during the wet season (period of peak Parthenium infestation) women have to wake-up earlier and work later in order to complete the work that has to be done. In contrast, men do not have to worry about the additional activities to manage the household.
 - Women are also responsible for preparing the additional food required to feed any additional hired or community labor used to clear Parthenium. Several respondents commented that the amount of additional food available and / or time available to prepare the food affected their household's decision on how many additional laborers to hire.

Decision-making

- Ethiopia is patriarchal society, with men generally having greater influence in household decision-making; however, men's and women's ability to participate in decisions within the household does appear to be affected by several factors, including age, education level, and experience working with NGOs.
- However, respondents reported the importance of mutual agreement to household decision-making, with one respondent commenting, “a husband and wife should be one person”, referring to how decisions should be made within the household.
- Joint decision-making was also reported as crucial for decisions regarding how income (generated from crop sales, livestock sales, and dairy products) should be

spent and/ or invested. However, women had greater influence over decisions regarding income from the sale of small-ruminants and men did have greater influence over decisions regarding the income from the cash crops.

Beliefs and Perceptions – Parthenium Contaminated Milk

- Many farmers reported the negative effects of Parthenium on cattle health, milk production, and milk quality. In response, farmers have started to keep their cattle within the house-lot compound and supplying them with supplemental feed (crop residue and/or purchased feed).
- Respondents confirmed that children will reject Parthenium-contaminated milk. The bitter taste is a clear indicator of Parthenium contamination. However, the effects of consuming Parthenium-contaminated milk and/or dairy products remains unclear. Several respondents, noted the perceived link between Parthenium-contamination and increased illness in children, but this link will be difficult to distinguish.

Training Activities Conducted:

Program type (workshop, seminar, field day, short course, etc.)	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		
Gender Field Work	07/17- 07/18	2	1	1	IPM Innovation Lab	Train field team in gender and participatory research methods for RGA
Biocontrol Agents Awareness Activity	7/19/17	15	0	15	Virginia State University	To raise awareness of the biocontrol agents and encourage farmer's willingness to have them released on their land

Suggestions, Recommendations, and/or Follow-up Items:

- Conduct additional semi-structured interviews to obtain a total sample size of 30 respondents for the gender study. In addition, conduct additional FGDs to explore themes identified during the RGA including, but not limited to, the

intersection between Parthenium, weeding, and women's food preparation responsibilities.

- Work with project personnel and local development agents to develop some general guidelines for developing gender responsive messaging for communicating information about the bio-control agents.

List of Contacts Made:

No.	Name	Institution	Responsibility/ Specialization	Phone Number	Email Address
1	Wondi Mersi	Virginia State University - USA	PI – Parthenium Project	804-524-5651	wmersie@vsu.edu
2	Ferdu Azerefegne	Hawassa University - ET	Researcher	0911876563	azeref@gmail.com
3	Lydia Alemayehu	VSU – Parthenium Project	Researcher	0913246933	sintualemayhu@gmail.com
4	Tesfay Amare	Ambo University - ET	Research Assistant	0963307801	tesfayshire@gmail.com
5	Tadele Tefera	icipe	PI – Grains IPM	0944168240	ttefera@icipe.org
6	Faith Bartz Tarr	USAID			fbartz@usaid.gov
7	John Bowman	USAID/BFS	AOR – IPM IL	2027125272	jobowman@usaid.gov
8	Menale Kassie	icipe	Researcher	0910006372	mkassie@icipe.org
9	Lalit Prasad Sah	iDE Nepal	Program Coordinator	977-9844022533	lpsah@ideglobal.org
10	Glen Hariman	USDA	TAC Member	217-328-0548	ghartman@illinois.edu
11	Lawrence Datnoff	LSU – USA	TAC Member	255-578-1366	LDatnoff@agcenter.lsu.edu
12	Srinivasan Ramasamy	AVRDC	TAC Member	886-6-5837801	SRINI.RAMASAMY@WORLDVEG.ORG
13	Rely Pascal Gpasin	Independent	TAC Member	925-938-2455	dely@delygapasin.com
14	Buyung Hadi	IRRI -	PI – EPIC Cambodia		b.hadi@irri.org
15	George Norton	Virginia Tech – USA	PI – Asia Vegetables IPM		gnorton@vt.edu
16	John Cardina	Ohio State - USA	PI – East Africa Vegetables IPM		Cardina.2@osu.edu
17	Nguyen Van Hoa	SOFRI - V	PI – Exportable Fruit Crops		Hoanv.sofri@mard.gov.vn
18	Nir Krakauer	CUNY – USA	PI – Modeling for Biodiversity		nir@ce.cuny.cuny.edu
19	Abhijin Adiga	Virginia Tech – USA	PI – Invasive Species Modeling		abhijin@vbi.vt.edu
20	Birtukan Malsa	Ethiopian Government	GDA Agent		