



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Second Quarterly Report (April – June, 2020)

Feed the Future Nepal Integrated Pest Management (FTFNIPM)

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Project Overview

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Abbreviations and Acronyms

AOR	Agreement Officer's Representative
CBA	Cost-Benefit Analysis
CDCS	Country Development Cooperation Strategy
CIMMYT	International Center for Maize and Wheat Improvement
CLA	Collaborate, Learn, and Adapt
COVID-19	Corona Virus
CSISA	Cereal Systems Initiative for South Asia
DCC	District Coordination Committee
ED	Executive Director
F2F	Farmer to Farmer
FAW	Fall Armyworm
FTF	Feed the Future
FTFNIPM	Feed the Future Nepal Integrated Pest Management
GESI	Gender Equality and Social Inclusion
GON	Government of Nepal
iDE	International Development Enterprises
INGOs	International Non-Governmental Organization
IPM	Integrated Pest Management
IPM IL	Integrated Pest Management Innovation Lab
IR	Intermediate Result
KISAN	Knowledge-Based Integrated Sustainable Agriculture Development
MEL	Monitoring, Evaluation and Learning
M&E	Monitoring and Evaluation
MELP	Monitoring, Evaluation and Learning Plan
MOALD	Ministry of Agriculture and Livestock Development
NARC	Nepal Agricultural Research Council
NGO	Non-Governmental Organization
NMRS	National Maize Research Station
NPV	Nuclear Polyhedrosis Virus
NSAF	National Seed and Fertilizer
NMRP	National Maize Research Program
ODK	Open Data Kit
PERSUAP	Pesticide Evaluation Report and Safer Use Action Plan
PQPMC	Plant Quarantine and Pesticide Management Center
PSE	Private Sector Engagement
SABAL	Sustainable Action For Resilience And Food Security
TOT	Training for Trainers
USAID	United States Agency for International Development
USGFSS	U.S Government Global Food Security Strategy
ZOI	Zone of Influence

Executive Summary

This report covers ongoing and accomplished project activities during the period from April to June 2020. In this quarter, project activities were mainly focused on capacity building, stakeholder coordination, and response to the evolving global COVID-19 pandemic.

Key Project Highlights During Reporting Period:

Coordination with partners and regular taskforce meeting: FTFNIPM has been regularly coordinating with USAID FTF implementing partners to discuss program activity updates and other issues related to the field. In June, FTFNIPM organized three virtual meetings with the USAID FTF FAW Taskforce committee.

Organized Pesticide Management and Safety Webinar: FTFNIPM successfully organized the Pesticide Safety Webinar in collaboration with Plant Quarantine and Pesticide Management Center (PQPMC), Plant Protection Society (PPS), Nepal. Tim McCoy, pesticide expert from Virginia Tech, was the resource person for this event.

Government Stakeholder Coordination for FAW and Locust: The FTFNIPM team has been working and coordinating very closely with the Government of Nepal on FAW and the recently invasive Desert Locust, which arrived in Nepal this quarter.

FTFNIPM Project Steering Committee: FTFNIPM contacted and coordinated with Chief of International Cooperation Division at the Ministry, who is the point person for managing the project steering committee, and submitted a formal request letter with necessary project documents to also include the FTFNIPM project in the FTF project (K-2 and NSAF) steering committee, since there is already an existing steering committee formed for K-2 and CIMMYT's NSAF/CSISA project.

Rearing and Release of FAW Egg Parasitoids: Following the GoN's decision to relax national lock down restrictions, effective from June 15, 2020, NARC scientists in Khumaltar and Rampur have resumed office work and are restarting research activities. The FTFNIPM/iDE team have been in regular contact with the NARC team, Entomology Division, Khumaltar, and the National Maize Research Program (NMRP), Rampur, to inquire into the status of FAW egg parasitoid rearing. This work is being continued in the Khumaltar and Rampur research stations.

Response to Global COVID-19 Pandemic: Similar to the previous quarter, due to the global COVID-19 pandemic, the majority of FTFNIPM's planned activities for this quarter have been disrupted. In spite of this situation, the FTFNIPM implementation team has been coordinating closely with USAID/Nepal, the Government of Nepal (GON), and organizing virtual activities and disseminating information via digital technologies.

Major Activities Accomplished

Project Tasks and Activities

Task 1: Review of work plan

FTFNIPM Review Status and workplan meeting through Zoom

The virtual Zoom meeting was organized on Friday May 29, 2020 (Friday) by IPM IL Director Dr. Rangaswamy Muniappan along with USA scientists and the consortium implementing partner team from Nepal (iDE & NARC). Interactive discussions on the review updates on Nepal sites were made by individual members from both implementing consortium team members at NARC and iDE. Discussions were made on the planned activities to be accomplished in the current COVID-19 lockdown situation.

Major points of discussion included:

- Due to lockdown, no field trials are ongoing at the moment.
- Possibility of a webinar on IPM packages. We need to determine what audience would be suitable, and if it would be productive. The audience could include government stakeholders, FtF members, provincial areas, etc. Muni will check to see if there is any interest.
- Possibility of Pesticide Safety Training online. Tim McCoy would like to participate in the upcoming FAW online meeting to better understand the structure. It could be possible to do one training for high-level stakeholders and one training for provincial stakeholders. A Zoom meeting with PQPMC officials is being arranged to better understand local needs.
- Pheromones are not considered pesticides by US EPA, but Nepal does consider them pesticides. This discrepancy needs to be addressed.

Activity 1: FTFNIPM steering committee reviews the proposed annual workplan.

FTFNIPM contacted and coordinated with Mr. Shankar Sapkota, Under Secretary/ Senior Agriculture Economist of Development Cooperation and Coordination Section at the Ministry of Agriculture and Livestock Development (MOALD), who is the point person for managing the project steering committee, and submitted a formal request letter to Mr. Rajendra Prasad Bhari, Secretary, MOALD with necessary project documents for including FTFNIPM project in the FTF project (K-2 and NSAF) steering committee, since there is already an existing steering committee formed for K-2 and CIMMYT's NSAF/CSISA project. The request letter was addressed to the Mr. Rajendra Prasad Bhari, Secretary, MOALD with copy to Dr. Rajendra Mishra Joint Secretary and Shankar Sapkota, Under Secretary at the Ministry of Agriculture and Livestock Development. We also reached out to create coordination between the FTF team and Dilli KC from NSAF/CIMMYT as well as Bharat Upadhyaya from K-2 for this. We followed up and requested MOALD to invite us to join the K-2/NSAF steering committee, which was planned to be organized in the first week of July. However, we received feedback and a suggestion from Shankar Sapkota, Under Secretary, and also from the Agriculture Secretary, that FTFNIPM should make a presentation on the project and update our activities in July after the end of the Nepali fiscal year, and that the decision will be made at that time for FTFNIPM to join the FTF steering committee in the next meeting. So, the FTFNIPM team will be doing follow-up on this with MOALD in July 2020.

Objective 1: Make the business case for IPM practices for FTF focus value chains

Task 1: Conduct cost-benefit and impact analysis of IPM to demonstrate financial and economic performance of IPM practices compared to conventional pest management practices, considering factors that may be unique to women, youth, and marginalized groups.

The proposed farmer survey is to assess IPM adoption to date on the target crops – this has been ongoing. A Master's student at Virginia Tech and the iDE team from Nepal has been working on the development of the questionnaire which addresses the objective of the study. The team will be ready to implement this activity as soon as the national lockdown is lifted within Nepal. FTFNIPM's GESI team has been coordinating with the team at Virginia Tech and in Nepal to ensure that the sampling approach for the survey is representative and engages an appropriate number of women, youth, and other marginalized groups.

Task 4: Disseminate results of analyses through the media to farmers and others.

Activity 1: Work with partners to reach as many farmers, agro-vets, and other networks and organizations to spread information through a variety of media on the benefits of IPM practices and packages for the target crops.

Dissemination of Group Text SMS messages on FAW, IPM Management and the COVID -19 pandemic.

The global COVID-19 pandemic and the GON's response to prevent the spread of the virus has prevented farmers from accessing critical pest management supplies and information. In response, FTFNIPM is mobilizing existing tools to disseminate bulk SMS messages on the current COVID-19 situation and FAW management.

FTFNIPM team in Nepal coordinated with the Government of Nepal and FTF IPs for collaboration on delivering the SMS messages to the project beneficiaries. The developed messages have been shared among the technical team from all the IPs and the final SMS information is delivered to the recipients. The first messages started from April 3, 2020 onwards. The messages will be delivered on a weekly basis covering a wide range of recommendations for the FAW management. Since the end of this quarter, FTFNIPM has disseminated a total of 4,669 messages on IPM recommendations, including information on FAW and the desert locust, which invaded Nepal on June 27, 2020.

We also disseminated information to farmers and technical personnel through different media and video clips in social media. Altogether, 5 local FM, 2 national-level radio, 4 newsprint, and 2 national television outlets had covered our technical advice related to FAW management during this lockdown period.

Task 7: Work with the private sector to ensure commercial availability of pheromone lures and traps, bio-, botanical- and chemical pesticides, and other IPM products. Encourage national, regional, and international business connectivity.

Virtual communication has been regular and ongoing with the central level distributors, private companies, and the national level PEAN team in order to assure the availability of pest lures and bio-pesticides even during the lockdown. In this regard, we are coordinating with the Government officials at MOALD and PQPMC through discussion in the FAW Technical Committee for increasing the availability of IPM-recommended technologies for FAW management including pesticides, lures, and other agriculture inputs at local agrovets during lockdown at the federal, provincial, and local level.

Objective 2: Institutionalize and inclusively scale IPM packages for FTF focus value chains

Task 1: Support FAW Taskforce Committee meetings

FTFNIPM organized three events for the USAID Taskforce Committee meetings this quarter. The meetings were organized virtually through Zoom with FtF implementing partners (K-2, NSAF/CSISA, F2F, IPM IL Core program and FTFNIPM). The meetings mainly discussed:

- ❖ Updates on FAW infestation in 25 districts of FtF ZOI
- ❖ Agreed to do FAW field survey and surveillance through monitoring of low-density lures using FAW lure from Bangladesh and PIC lure that is available in Nepal for comparison and also the efficacy of these 2 types of lures
- ❖ Organize capacity building training to FtF field staff on Rice IPM, Tomato vegetable IPM, and also share the recent threat on Desert Locust
- ❖ Identifying training content and date/time for Dan McGrath's remote assignment for conducting virtual capacity building training
- ❖ FTFNIPM will prepare a concept note on hiring Dan and submit to F2F/CRS

Nepal team is regularly (every 15 days or so in a month) coordinating and facilitating the organization of high level FAW technical committee meetings while including participation from provincial level in coordination with MOALD and PQPMC; however, high-level taskforce meetings, which is chaired by Ag Secretary, are not being organized in this lockdown period and are planned to organize in July. Based on the technical committee meetings, bulk messages are being sent to the members.

Task 2: Rearing of FAW egg parasitoids (Entomology division Khumaltar and National Maize research program Rampur)

Activity 1: Mass multiplication of *Trichogramma* sp. and *Telenomus* sp. at NARC Entomology Laboratory at Kathmandu and NMRP Laboratory at Rampur

Survey on the FAW parasitoids

Cultures of two parasitoids, *Corcyra* and fall armyworm, are being maintained at the lab in Khumaltar, and *Corcyra* is being maintained in the lab at NMRP/Rampur. However, scientists are unable to mass-produce the parasitoids due to COVID-19 pandemic and the national lockdown. After the lockdown is lifted, the Nepal team will plan to organize mass-rearing training workshops in provinces and will coordinate with FAO to set up labs. Some private companies are also interested in gaining information and coordinating with the team in Nepal. For mass culture of these parasitoids, insect cages were sent to the Mission which are yet to be delivered in Kathmandu due to COVID-19 and the lockdown situation. They will be distributed to the parasitoid rearing labs at Khumaltar and Rampur once received.

With the Government's decision on lockdown relaxation effective from June 15, 2020, NARC scientists in Khumaltar and Rampur have resumed working in the office and are continuing research activities. FTFNIPM/iDE team are in regular contact with NARC team of Entomology Division, Khumaltar and National Maize Research Program (NMRP) Rampur for enquiry on the status of FAW egg parasitoid rearing continuing at the Khumaltar and Rampur research stations. FAW egg parasitoid *Trichogramma* spp. and the *Corcyra* moth are being reared and maintained at Khumaltar lab, but only *Corcyra* moth is being reared and maintained in Rampur lab during this lockdown period. Mr. Ghanashyam Bhandari, scientist at

NMRP Rampur, is also involved in live interviews through local FM radio, local newspaper, and information sharing in general on research updates out of the NMRP stations. FTFNIPM is also coordinating and consulting with the NMRP scientist for the review of the developed SMS message for delivery to the recipients. The ongoing work has been summarized below:

Entomology Division/NARC, Khumaltar, Lalitpur (Ongoing activities)

- Continuation of the egg parasitoid *Trichogramma* rearing at Entomology Division, NARC
- Host insect *Corcyra cephalonica* and fall armyworm rearing also continues at Entomology Division, Khumaltar/NARC.
- Proposal to NARC head office submitted for the provisional amount received in NARC account from FTFNIPM/VT. Joint proposal submitted for Entomology Division and Rampur to NARC headquarters.

National Maize Research Program (NMRP)/NARC, Rampur

- Strengthening of laboratory (new wiring was done in both rearing rooms) for mass culture of the host insect and parasitoids
- Four more boxes with new diet ingredients were set up for rearing of host insect (*Corcyra cephalonica*) which is required for rearing of egg parasitoid (*Trichogramma chilonis*).
- Host insect eggs collection is ongoing from the Rampur research stations.
- Collection and rearing of fall armyworm larvae from the field is ongoing. Some of the matured larvae of FAW reached to pupal stage and some are ready for adult emergence.

Additionally, NMRP Rampur has set up 5 FAW research activities as a NARC ongoing research trial at NMRP research field even in the current ongoing lockdown situation. In Nepal, it is time for the maize cultivation season and the FAW infestation on maize is increasing. To date, the FAW has been reported from 46 out of 77 districts. This shows that this pest has reached across the maize growing areas in almost all maize growing areas of the country. It is difficult to manage this pest due to lack of technical knowledge, unavailability of the FAW recommended management tools and pesticides at the right time, and the ongoing lockdown situation in Nepal. Field movement is almost restricted. However, technical information has been provided to the farmers through telephone calls and print media.

The current NMRP/Rampur field research trials for FAW management are ongoing and have been summarized below:

1. Monitoring of FAW through pheromone lures and light traps at NMRP

We have evaluated FAW lures developed by different companies (PCI Company, Innovac and Phero bank) to find their moth-catching efficacy. We have not been satisfied with the lures thus far as they are not working properly in catching the adult FAW moths, as other lepidopteron moths are attracted along with FAW moths as well. We are looking at the effective lures from other companies like (Pheromone Company, Russell IPM and others). Simultaneously, we have also monitored this pest through black light trap (developed by NMRP). Very few numbers of FAW adult moths have been captured through this light trap.

2. Evaluation of safe chemical insecticides available in market against FAW at NMRP (supported by local funds and not by FTFNIPM)

We have tested six safer insecticides available in the market for the management of this pest. We completed this trial in the winter season and now the same trial has been repeated during the summer season. Among the tested insecticides, Spinosad 45%SC @ 0.3 ml/liter of water showed the most significant results followed by Chlorantraniliprole @ 0.4 ml/liter of water, Spenitoram @0.4ml/liter of water, and Emamectin benzoate @ 0.4gram/liter of water, respectively.

3. Study of seasonal variation of FAW infestation in natural field conditions at NMRP

Two maize pipeline genotypes (ZM-401 and RML-86/RML-96) have been planted at 10 day intervals throughout the year. From last year's experiment, we found that the level of plant infestation was higher in summer than the spring season and found even infestation levels in the winter season in Terai conditions. We concluded that the infestation level of FAW below 10°C in the Terai condition means that this pest can survive throughout the year in Chitwan condition.

4. Ecological management of FAW through Push-Pull Approach at NMRP/Rampur

This experiment has been carried out at our station and now the crop is in dough stage. Napier and *Brachiaria* grass have been used as a trap crop and *Desmodium* has been used as an intercrop with maize. Based on visual observation at knee high stage (25 DAS) and before tasseling stage (50 DAS), we found 40-50% maize crop has been saved from both FAW and stem borer compared to maize sole crop. We will conclude the exact performance after observing the yield and yield attributing characters.

5. Mass rearing of parasitoids at NMRP

We have strengthened a laboratory for the mass-rearing of egg parasitoids to some extent. We need a well-equipped laboratory for regular rearing of these parasitoids. We are currently rearing *Corcyra cephlonica* for egg collection that is required for *Trichogramma* rearing. We are unable to rear *Telenomus remus* in our laboratory due to lockdown situations of the country. Most of the laborers working at the NMRP stations have trepidations about COVID-19 working conditions.

Task 5: Conduct pesticide safety education training for GON officials, NGOs, value chain project representatives, agro vets, and private companies, including women, youth, lower castes, and members of disadvantaged groups, among other farmers, at Kathmandu and in the ZOI.

Activity 1 – Mr. Tim McCoy, Extension Entomologist, Virginia Tech will visit Nepal for two weeks as soon as the global Coronavirus crisis is over and a) review pesticide regulations in Nepal, b) assess the need for any amendments to existing PERSUAPs applicable for Nepal, and c) conduct workshops on pesticide safety trainings

On June 30, 2020 (Tuesday), FTFNIPM successfully organized the first Pesticide Safety Webinar in collaboration with Plant Quarantine and Pesticide Management Center (PQPMC), Plant Protection Society (PPS), Nepal. Before organizing this event, there was substantial initial preparation on training content and possible dates/time with Government of Nepal and the Virginia Tech team. Tim McCoy, Pesticide expert from Virginia Tech, was the resource person for this event and he will also review Nepal pesticide act and

regulation, including review of PERSUAP. With consultation with Government stakeholders and FTF projects (K-2 and NASF) and follow-up meeting, Government Official Mr. Sahadev Humagain, Chief PQPMC, Mahesh Acharya, Manoj Pokharel and Ms. Stuti from PQPMC, Dr. Muniappan from Virginia Tech and iDE/ FTFNIPM team decided to conduct two pesticide safety training events. In the first event, which was organized on June 30, 2020, 66 different stakeholders (MOALD, PQPMC, NARC, Private Sector Company, University, and FTF project team) participated in the webinar in addition to international participants from Cambodia and Bangladesh.

- The first webinar was intended for central level high GON officials on June 30, 2020 (Tuesday for 2 hours at 7.45 am in the morning). The webinar started with the warm welcome and brief objectives by the Dr. Rangaswamy Muniappan, Director IPMIL/VT, followed by opening remarks by Dr. Hari B. KC, Joint Secretary and General Secretary of the Plant protection Society Nepal. In his remarks he highlighted the pesticide acts and misuse of chemical pesticides.
- The second webinar was planned for July 7, 2020 (Tuesday) for provincial level field team for FtF project staff, K-2 private sector grantees, agrovets, provincial and district Government officials, and others. Continuation of the webinar was planned for July 16, 2020 @ 7:45 am. The details on this will be shared in next quarter Report.

Objective 3: Create an enabling environment for the safe and effective management of existing and emerging threats to plant health.

Task 1: Provide inclusive capacity-building support to public and private institutions and stakeholders who develop IPM markets and engage in pest management.

Activity 1 – Capacity building of public and private institutions through various activities in implementation of FTFNIPM.

Training on FAW management by Dan McGrath, F2F volunteer

Three days of capacity building training on FAW management took place in this quarter through the support of CRS company, who coordinated with Dan McGrath, a F2F volunteer expert on fall armyworm. The events were attended by the USAID FtF project team and FAW technical committee experts from central and provincial levels. The training was conducted through digital technology-Microsoft Meets. The main objectives of the training are provided below:

- ❖ To provide technical backstopping to USAID’s FtF projects staff and Provincial Government staff by organizing an online FAW management training
- ❖ To aid field supervision/monitoring on incidence and severity (level of damage) of FAW in the areas of outbreak and provide technical support/backstopping on IPM recommended practices based on the experiences from other countries.
- ❖ To review the existing FAW protocol on surveillance and IPM management approved by MOALD and to assess effectiveness in the field of FAW protocols and recommend improvements.
- ❖ To provide recommendations based on the global field experience and interaction with the technical experts of Nepal for effective management of FAW in different provinces of Nepal.

Who benefitted from the training?

The virtual training programs targeted national FAW taskforce committee members both from the Government as well USAID's FTF Projects, NARC researchers, freelance experts, consultants, university academicians, and other stakeholders from private sector agrovets and seed companies involved in FAW management. The beneficiaries and target audience for the training are listed below:

1. Beneficiaries from Central level training program
 - a. High level technical team
 - b. Technical team of FTF implementing partners (K2, NSAF/CSISA (CIMMYT), FTFNIPM/IPMIL (iDE Nepal), Government of Nepal (MOALD, PQPMC, NARC, Academic Institutions)
2. Beneficiaries from cluster level training (2 trainings)
 - a. FTF project staffs
 - b. Private sector (Grantee staffs/Cooperative members/Agrovets)
 - c. AKC staffs, Provincial lab staff, Provincial research station staff

The virtual training program also benefitted other stakeholders, including development planners, ministries of Agriculture, policymakers, non-governmental organizations, agencies, professional associations, public and private enterprises, and researchers and academics. The other experts and stakeholders involved in different sectors and institutions that work on FAW management-related issues could also benefit from the materials provided through the virtual training program.

Details on the training are below:

Days	Date	Participant type	Number of Participatns in Virtual FAW training	Major topic covered	Remarks
Day 1:	May15, 2020	Field level USAID Ips and District level AKC and Plant protection Lab officers	69(M/F:57/12)	<ul style="list-style-type: none"> ❖ Global status of FAW: spreading trend, damage levels and lessons for Nepal** (Extension worker) ❖ Biology of FAW and how the pesticide affects the insect's body system (extension workers) 	Facilitate d by Dr. Dan McGrath , Californi a, USA
Day 2	May 22,2020	Central level and provincial level (ADD representatives)	41(M/F:36/5)	<ul style="list-style-type: none"> ❖ Experiences on establishing an effective FAW surveillance and monitoring network ❖ Suggested surveillance approach for high hills, mid hills and Terai regions of Nepal ❖ FAW specific pheromone lure trap for Nepal ❖ IPM options, including new recommended pesticides and biological control suitable/effective for the Nepalese condition ❖ Ecological FAW management principles and best practices – drawing lessons from other countries ❖ Effective new pesticides for FAW control focusing on the Nepalese farmers 	
Day 3:	May 29,2020	All (Central and USAID; IPs	78(M/F:68/10)		

INTEGRATION OF CROSSCUTTING ISSUES

GESI-focused activities during this quarter (April-June 2020)

A. Secondary data review and write-ups

GESI team finalized GESI analysis Scope of work (SOW) and submitted to USAID AOR. As per the SOW, the team focused on secondary data analysis throughout the lock-down, but shifted to include information being published on the gendered implications of COVID-19. In line with this, GESI specialist summarized KISAN II GESI analysis document and reviewed KISAN II GESI tools and submitted to Gender Specialist. KISAN II GESI Analysis is a brief summary of social disparities that constrain women and marginalized communities and affect their participation in agricultural value chains. It devises strategies that reduce these disparities. The analysis broadly elaborates on opportunities and constraints for the inclusion of women and disadvantaged groups and those are:

- 1) Accessing mechanization services and other productivity-enhancing technologies;
- 2) Diversification into off-farm micro-, small- and medium-scale enterprises (e.g., agro processing, storage, mechanization services, technical services or other value-addition enterprises supporting these value chains) and;
- 3) Platforms that improve market linkages within value chains (e.g., cooperatives, Market Planning Committees (MPCs) and others) for access to inputs, technology, aggregation services, storage and markets

The Nepali version of GESI guidelines used by KISAN II is translated to English for the ease of analysis. The guidelines mainly describe three processes of how we can assure i) access to resources, ii) women empowerment and, iii) Decision making skills. GESI Specialist also contributed to the write-ups on the impact of COVID-19 in Nepal agriculture and our possible activity for its recovery program within our scope of work was submitted.

B. GESI coordination meeting with FtF project team: A zoom meeting was organized on Tuesday, May 12, 2020 with FtF Projects (K-2, NSAF, F2F and FTFNIPM). GESI specialists (Sangita Budhathoki-K2 and Dr. Srinivas Gautam- NSAF) including technical team members (Harish Devkota, Rajendra Sahu, Hari Kumar Shrestha and Phaindra Pandey) participated in the meeting. Daniel Sumner and Niki Maskey presented on GESI components and the GESI Analysis plan of FTFNIPM. The meeting agreed to conduct virtual key informant interviews (KII) during this countrywide lockdown period due to COVID-19 pandemic. Some of the brief notes from the zoom meeting were:

- The zoom meeting team will continue to coordinate for GESI components in FTF projects.
- FTFNIPM teams will follow-up in Key Informant Interviews (KIIs) to identify the potential candidates and mode of communications.
- FTFNIPM GESI Specialist will be linked to USAID's GESI working group.
- Members of this team can always email to ask questions, share experience/knowledge and comment for future collaborations.

C. Revision of key informant interview guideline: KII guide was revised for virtual interviews with the inputs from the technical team and a zoom meeting with FTF project staff in May. Also, questions on COVID-19 situation were added to the guide. After incorporating all the inputs, VT Gender specialist initiated the interview by emailing to KISAN II GESI focal person and iDE Nepal Country Director on May 28 and 29.

D. FTFNIPM GESI Analysis Gendered Implications of COVID-19: A number of activities are completed to expand GESI analysis to integrate the impact of COVID-19

- A case study on “Diagnosing plant diseases during COVID-19” was prepared through telephonic conversation with plant doctor and community business facilitator Ms. Deepa Poudel of Surkhet.
- Sara Hendery, the IPM IL's Communications Coordinator, prepared and shared a short article on the initial gendered impacts of the COVID-19 pandemic, including the themes highlighted in the interview with the community business facilitator of Surkhet, Ms. Deepa Poudel. The inputs and comments were provided by FTFNIPM team from Nepal.
- Meeting with Lynn: To meaningfully address underlying inequalities and foster inclusive and sustainable agricultural led growth, FTFNIPM GESI team conducted an initial rapid GESI review focused on how FTFNIPM can implement a gender-responsive and socially inclusive response to COVID-19. FTFNIPM team took an opportunity to discuss the document and some other ideas with Lynn Schneider (USAID). A Google meet was organized on June 17th 6:45 pm Nepal time. There were seven participants from VT and iDE Nepal.

E. FTFNIPM GESI Coordination Meeting and Invitation to Conduct a Virtual Interview to Support FTFNIPM’s GESI Analysis

- Two KIIs completed. iDE Nepal Country Director, Dr. Corey O’Hara, was selected for FTFNIPM GESI Analysis and provided written interview through a questionnaire survey and KISAN II GESI Advisor, Ms Sangita Budhathoki, delivered her KII virtually through a zoom meeting on June 18 at 7:45 am Nepali time. Daniel and Niki together conducted the interview. Note-taking is completed and analysis is ongoing for both the KIIs. Initial key findings from these interviews are: 1) There is a need for additional information on the factors that affect the ability of young women to pursue careers as CBF in the agricultural supply chain; 2) In the context of the COVID-19 pandemic, there is a need for more explicit gender transformative approaches that establish structured activities to constructively engage men (husbands, father in laws, other community members) to support the transformation of detrimental social norms that have historically marginalized women; and 3) There is increased recognition amongst FtF partners of the need to integrate consideration of gender-based violence (GBV) into project activities, but there is a need for further resource sharing amongst FtF partners so that activities can be coordinated so as to more effectively implement GBV-sensitive approaches in agricultural development projects.
- Recognizing that its activities are embedded in this context, FTFNIPM will rely upon information collected through its own GESI analysis and collaboration with other USAID/Nepal implementing partners to: a) develop specific strategies that ensure FTFNIPM staff and partners are conscious of the potential negative implications of women’s increased participation in FTFNIPM trainings and application of improved technologies or management practices, b) identify local Nepali organizations

and institutions that are within FTFNIPM's geographic area of implementation, and c) engage community and household power holders (i.e. community leaders, husbands, fathers-in-law, and mothers-in-law) in encouraging women's participation in FTFNIPM trainings and other outreach activities.

- KII guide is translated to Nepali for further KI interviews for provincial and district level stakeholders. The identification of key informants still remains.

F. Virtual meetings attended:

- VT Gender Specialist and FTFNIPM GESI specialist attended the virtual FTFNIPM planning meeting organized on May 28, 2020, 6:45 pm Nepali time.
- GESI specialist attended iDE HQ organized by GESI Lucy group meeting where she presented a case on the women CBF operation amid COVID-19. She also attended virtual webinar on “*Food security crisis resulting from COVID-19*” organized by iDE HQ. The virtual meeting aimed to build on the ideas and contexts all shared to date to start focusing on specific areas of interventions that hold promise for iDE to have a transformative impact on the challenge of food security in the time of COVID-19.
- Participated in SEED MEL Community of Practice virtual meeting on June 10, 2020. The objective of the meeting was to share project experiences and learn how projects are monitoring their programs in the constrained operating environment due to COVID-19. Various USAID funded projects including KISAN II, NSAF, Paani, Hariyo Ban, FTFNIPM, etc. presented on monitoring, obstacles and innovative and adaptive practices all are using in the current situation. Participated in USAID GESI bi-weekly working group meeting on June 24, 2020 on Google meet. The meeting started with a short introduction of all participants. USAID GESI Advisor introduced Niki as GESI specialist from FTFNIPM. Niki gave a short introduction of herself, IPM program in iDE Nepal, FTFNIPM project and GESI component in this project. All the other GESI Advisors presented on the GESI activities that are ongoing in COVID 19 situation in FHI, Suahara, Care, etc. All the participants will share the relevant information
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- Participated in central level Pesticide Safety Webinar on June 30 and moderated for questions asked during the webinar to the technical team.

Stakeholder Participation and Involvement

FAW on Maize and its management on Mountain Business Plus TV: Air interview on Impacts of FAW on Maize and its management on Mountain Business Plus TV (April 23,2020) @ 6:20PM onwards (https://youtu.be/lk_9LeT1IVk). Mr Lalit Sah from the FTFNIPM participated by phone for the live TV interview on the FAW impacts and its management in Nepal through the Mountain Business TV, which is received throughout the country. Mr. Sah discussed the FAW infestations in different districts and current supply chain status due to the lockdown situations. He emphasized biological controls of this pest.

Chemical control is only the last resort for any kind of pest control. While using chemical pesticides, the farmers must use the personnel protective equipment's (PPE).

Participating in the FAMMEWS/Skype training organized by FAO Nepal: On April 28, 2020 @ 2:00PM onwards, FAO HQ (Jean) and RAP, Bangkok (Yubak) conducted the FAWMEWS application session to the colleagues of Nepal from government and the non-government project staffs. Arjun Thapa (FAO), Nepal coordinated the program in Nepal, where the participants were from NPPO, quarantine, pesticide management, Ministry, Department, NARC, and FTFNIPM/iDE Nepal. NSAF/CIMMYT and other technical collaborators participated in the program. The session lasted for more than two hours with a question and answer session. This has begun at the time of maize growing stage in Nepal, which is currently at the seedling stage in most places, so that the surveillances will be continued for the whole season.

Collaboration with the Government of Nepal:

1. On May 23, 2020, FTFNIPM along with the PQPMC and NSAF, assisted in the training program organized by Palungtar Municipality of the Gorkha District, Province 4. The participants were from AKC and JT/JTS from the rural municipality. Altogether there were more than 25 members participating in the virtual training connected through Zoom.
2. On the recent concern of possible invasion of the locust in Nepal, a virtual training session on “Desert Locust Sensitization,” was organized on Friday, May 29, 2020. This was organized in coordination with Locust Task Force, Ministry of Agriculture and Livestock Development, Government of Nepal, FAO country Office, Nepal and iDE, Nepal. There were more than 100 participants in the Zoom meeting including MOALD, PQPMC, NARC, FAO, iDE, universities and the private sector. The training was facilitated by a renowned expert Dr. Keith Cressman, Senior Locust Forecasting Officer, based in FAO, Rome and coordinated by FAO regional program, Bangkok. The video recorded link of the training program is in given below:

https://drive.google.com/file/d/1HPIAmRxyg3N6FtEKAiFymrnoHR2pOlc_/view?usp=sharing

The key messages from the training were:

- Spring-bred immature adult groups and swarms that arrived in Rajasthan, India from Pakistan continued to move east in the eastern portion of the state and to the central states of Madhya Pradesh and Maharashtra. As of May 26, at least one swarm had reached to the northeast of Bhopal. Much of these movements were associated with strong westerly winds from Cyclone Amphan in the Bay of Bengal.
- Several successive waves of invasions can be expected until July in Rajasthan with eastward surges across northern India as far as Bihar and Orissa followed by westward movements and a return to Rajasthan on the changing winds associated with the monsoon. These movements will cease as swarms begin to breed and become less mobile.
- Swarms are less likely to reach Nepal and Bangladesh. Nevertheless, Nepal is encouraged to take anticipatory action by:
 - Familiarizing themselves with Desert Locust, distinguishing them from other grasshoppers to avoid confusion and misinformation,
 - Using an Android app, eLocust3m, for reporting to national authorities and FAO, and (3) mounting a public awareness campaign to avoid any unnecessary confusion and panic.
 - The recently formed technical team can play an important role concerning anticipatory actions.

Some of the additional reference materials on this Desert Locust can be accessed from below links:

<http://tiny.cc/DL2020>

3. FTFNIPM team has been very closely working and coordinating with the Government of Nepal on FAW and the recently invaded Desert Locust, which arrived in Nepal on Saturday, June 27, 2020. Our Technical expert Lalit Sah joined the emergency meeting called by MOALD on June 28 (Sunday) and provided technical inputs/support to the Locust Taskforce committee coordinated by Chief PQPMC. The Locust factsheet and guideline documents for locust have been prepared and posted on the PQPMC website.

Summary of Results until Date:

Impact of COVID-19 on Program Implementation

Due to the global COVID-19 pandemic, the following planned activities in this quarter (April-June 2020) have been postponed for now. These activities will be adjusted and rescheduled for when the COVID-19 situation normalizes in Nepal. The FTFNIPM team at Virginia Tech and in Nepal is regularly reviewing the situation and remains in close contact with FTFNIPM's AOR and Alternative AOR so activities can be updated/ revised to respond to the situation.

1. Conduct cost-benefit and impact analysis of IPM to demonstrate financial and economic performance of IPM practices compared to conventional pest management practices, considering factors that may be unique to women, youth, and marginalized groups.
2. Agrovet Capacity building on tools and technologies on Crops packages(FAO , PQPMC & FTFNIPM)
3. Provide technical support to project partners and stakeholders as required to ensure they are equipped with the skills and capabilities to disseminate IPM information, practices, and technologies using gender-responsive and inclusive materials and approaches that account for farmers' varying resource and information constraints.
4. Design decision-making tool that can be run by farmers on a smart phone, by agro-vets on a smart phone, or by filling in blanks in a small booklet to help participants decide if it makes financial sense to include specific IPM practices in IPM packages on their crop plot. A rough prototype of this decision-making tool will be designed in Year 1 that will be tested and refined in subsequent years of the project.

Target vs. Progress

Substantial project activities were planned for June 2020 but have been affected by the COVID-19 pandemic lockdown. The progress towards FTFNIPM's performance indicators of this quarter has been presented in Table 1.

Table 1 FTFNIPM Indicators, Targets, and Results

Indicators	Baseline FY 2020	Annual Target	Q1 FY 202	Q2 FY 202	Q3 FY 202	Q4 FY 202	Annual Performance Achieved to the End	On Target	Reporting
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			0 Jan- Mar	0 Apr- Jun	0 Jul- Sep	0 Oct- Dec	of Reporting Period (%)	Y/N	
EG.3.2-24: Number of individuals in the agriculture system who have applied IPM practices with USG assistance	TBD	1000	-	-	-	-	-	Y	Annually
EG.3.2-25: Number of hectares under IPM as a result of USG assistance	TBD	500	-	-	-	-	-	Y	Annually
EG. 3.2: Number of individuals participating in USG food security activities as a result of FTFNIPM	TBD	400	*	144	-	-	36%	Y	
Custom: Number of private sector firms supplying improved IPM products or advisory services as a result of USG assistance	TBD	25	0	-	-	-	0%	Y	Quarterly
	TBD	35	0	-	-	-	0%	Y	Quarterly

Custom: Number of persons trained with USG assistance to advance GESI- responsive IPM approaches and strategies through their roles or private sector institutions									
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* The number 129 in the indicator was reported as the activity was organized by other FTF partners where FTFNIPM just facilitated in the events.

Achievements

- ❖ FTFNIPM successfully organized Pesticide Handling and Safety Webinar where more than 100 participants participated.
- ❖ Disseminating information on FAW, Crop IPM package, and others through SMS and Radio jingle and information materials disseminated through email (e-copy of the IPM crop packages).
- ❖ Strong coordination and collaboration linkages established with the Government of Nepal.
- ❖ Coordination and follow-up on FAW and Desert Locust and provided technical backstopping support to partners (K-2, NSAF, F2F, IPMIL projects)

Challenges

- ❖ Current lockdown of the country due to COVID-19 has disrupted the implementation of the planned field surveys and training and collaborating activities on time.
- ❖ Due to lockdown, no field demonstration and parasitoids release on maize has been done at the moment though the maize season has passed.
- ❖ Risk of the COVID-19 disease spread at the community level of the districts makes people scared of this disease.
- ❖ Restricted mobility to field sites to contain the spread of COVID-19.
- ❖ Invasion of the Desert Locust swarm from India might scare the farmers for crop damages in the coming days.

Lessons Learned

- ❖ Return of male out-migration is a possible subject area to address in data collection amidst the COVID-19 situation.
- ❖ Possibility of a webinar on IPM Packages. Even during the lockdown situations where we can involve a large number of participants from all the provinces.
- ❖ Virtual meetings and the utilization of social media platforms can be effective in the current lockdown to communicate important information regarding FAW management and IPM practices and technologies.
- ❖ Bulk SMS messages to the CBFs, Plant doctors, and MPC/CCs members, not only provide timely alerts but also provide valuable IPM recommendations for FAW management.

Planned Activities for Next Quarter (July-September, 2020)

Currently, the country is still in partial lockdown due to COVID-19. However, the following activities will be planned and implemented once the COVID-19 situation is normalized in the weeks/months to come.

- ❖ Organize FTF FAW taskforce meeting on July 3, 2020 (Friday) to discuss and plan for the management of desert locust in FTF ZOI districts.
- ❖ Participate in the high level FAW taskforce meeting on July 20, 2020 (Monday) to discuss the status updates and planned activities carried out by the FTF FAW taskforce.
- ❖ Organize the second event of pesticide management and safety training on July 7, 2020 (Tuesday) by Tim McCoy, pesticide expert from Virginia Tech, in coordination with Dr. Muniappan and Virginia team. The participants will be FTF projects staff, K-2 grantee Agrovets, Provincial and district level Government stakeholders and others.
- ❖ Regular coordination and follow-up with GoN & PQPMC and MOALD & FTF IPs including KISAN II, NSAF, CSISA/CIMMYT, F2F/CRS, and other projects such as FAO's Technical Cooperation Project (TCP) on FAW management in Nepal.
- ❖ Continuations of the virtual technical advisory services in FTF ZOI through ICT platforms. Advisory plant protection services through SMS to farmer cooperative collection centers (CC), KISAN II grantee agrovets, and community business facilitators (CBF)/plant doctors
- ❖ Advisory plant protection services through radio jingles and TV interviews
- ❖ Promotion and scaling of IPM recommended technologies and practices for FTF value chain crops including vegetable, lentil, rice and maize crops through FAW- virtual training for sharing IPM technology factsheet and organizing virtual capacity building training on following:
 - Rice IPM recommendation package by Dr. Muniappan from IPMIL/VT
 - Grass hopper/Locust by Lalit/FTFNIPM and Hari/NSAF
 - Tomato virtual training by Lalit Sah/FTFNIPM
- ❖ GESI team will continue their secondary data analysis and literature reviews. They will continue to closely coordinate with the activities implemented by the technical team, participate and plan to coordinate with KISAN II, NSAF and F2F staffs for their GESI assessment, and continue to conduct primary data collection. The team will follow up on completion of KII with remaining stakeholders as suggested by prior KII participants. The team will continue to actively participate in the virtual meetings organized by the technical team and provide necessary support as done in the earlier months.
- ❖ Provide technical support to project partners and stakeholders as required to ensure they are equipped with the skills and capabilities to disseminate IPM information, practices, and technologies using gender-responsive and inclusive materials and approaches that account for farmers' varying resources and information constraints.
- ❖ Efficacy testing of FAW lures/pesticides in infested districts in coordination with Entomology division Khumaltar and NMRP Rampur including NSAF/CIMMYT and K-2 field team
- ❖ Deliver training for USAID FtF Implementing partners on IPM Packages - Rice and Vegetables (tomatoes, cole crops)- and FAW management.
- ❖ Agrovet capacity-building on pesticide handling and safety, IPM tools and technologies on Crops packages (FAO, PQPMC & FTFNIPM)
- ❖ Continue collaborating with the FAO-funded project of PQPMC in management of FAW in Nepal
- ❖ Coordinate with FTF projects (KISAN-II, NSAF, IPMIL and F2F)
- ❖ Maintain regular contact and coordinate with Government stakeholders and FTF project IPs (KISAN II and NSAF/ CIMMYT) on FAW and desert locust management and field surveillance

Annex 1: Success Stories

The Gendered and Social Implications of COVID-19 in Nepal

Like many nations in the developing world, Nepal's agricultural sector and systems were at a critical juncture before the COVID-19 pandemic, on the precipice of becoming more profitable, inclusive, and resilient. Nevertheless, the economic and food insecurity shocks generated by country-wide lockdowns will inadvertently impede much of the progress made by disadvantaged communities, especially women.

The newest project out of the [Feed the Future Innovation Lab for Integrated Pest Management](#) – named **Feed the Future Nepal Integrated Pest Management (FTFNIPM)** – is culturing a gender-responsive and socially-inclusive approach to the disparities magnified by COVID-19. Studies show that women are often disproportionately impacted by crises, with COVID-19 as no exception.

Women play key roles in family nutrition outcomes in Nepal and around the world, be it through food preparation, food purchasing, or their own nutritional status. In a rapid gender and social inclusion assessment, the FTFNIPM team interviewed Deepa Poudel, a community business facilitator (CBF) -Plant doctor in Nepal, about the nuanced impacts of COVID-19 on women in her community. CBFs are local farmer-entrepreneurs who help deliver supplies from agri-businesses and give technical services on IPM recommendations to remote rural farmers.

“Women farmers who used to earn [income] by selling vegetables,” Poudel said, “are out of cash now.” With more family members cohabitating due to the country lockdown – with children no longer in school and other family members no longer working – Poudel said women are bearing the burden of purchasing and preparing extra food. Typical opportunities, supply chains, and markets that women often turn to for additional income for food purchasing have been disrupted due to the virus. Limitations such as the closure of local transportation facilities reduce a family's ability to sell produce, or simply force them to sell produce at the lowest market price.

Poudel noted that farmers she has interacted with since the rise of COVID-19, including her own family, are experiencing major “stress” during this uncertain time. Since women bear the disproportionate burden of caring for unwell family members as well as caring for children who are no longer in school due to quarantine measures, women's workloads are at an all-time high. Consequently, women may be unable to attend emerging farmer trainings – following strict social distancing guidelines – leading to further challenges in achieving agricultural prosperity.

“All family members are together [now],” Poudel said. “This has never happened before.”

In addition to increased care-giving responsibilities, another gap that continues to widen during the time of COVID-19 is access to trusted information. Based on preliminary findings, the constraints of women in Nepal already face in accessing information could intensify. CBFs like Poudel will play a critical role in generally providing farmers the trusted resources they rely on for growing crops as commercial agri-businesses and other businesses remain closed. In order to reach women and other disadvantaged groups that may have limited access to technologies like smart phones, FTFNIPM is turning to the radio and other

easily accessible platforms for delivering pest management information on emerging pests. One of those pests includes [the invasive fall armyworm](#), which is currently wreaking havoc on maize and other staple crops throughout Asia.

Weekly text messages on fall armyworm management and recommended IPM packages for vegetables are also being disseminated to staff from Feed the Future development projects, agro-vets, farmer cooperatives, CBFs, and others to ensure widespread access to crop health information.

However, as the COVID-19 pandemic persists, unanswered questions remain about how to provide for and protect disadvantaged communities: How can pest management messages be refined to better address current needs, challenges, and priorities? How can FTFNIPM overcome inequities in phone and internet access? At the household level, what barriers remain and how should they be addressed?

Prior to the onset of the global COVID-19 pandemic, FTFNIPM had already planned on conducting a qualitative study to assess the potential impact of applying IPM practices and technologies on women's time and labor. Additionally, the study will document the different pathways that are available and attainable for women to learn about IPM practices and technologies and to access IPM products, and assess any unintended negative effects for women. The study will adapt the recently developed Address How Agricultural Technologies Can Change Gender Dynamics and Food Security Outcomes toolkit designed by the Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) project. In the current context, now more than ever, it is essential that efforts to promote the application of IPM do not exacerbate women's already increasing workloads and burdens and that women are able to access information on improved agricultural technologies.

“Generally, farmers are facing many new challenges right now,” said Niki Maskey, a gender specialist with the FTFNIPM project, “including cash-deficits to buy agricultural inputs, shortage of seeds, decreased suppliers, and more. But FTFNIPM is mobilizing to assist these farmers, specifically women and marginalized groups, by continuing to shift our responses as the pandemic shifts as well. Most notably, we are coordinating with government officials to provide essential inputs and engaging with local collection centers to enable producers to secure better prices and influence over the value chain.”

In this regard, the FTFNIPM team is coordinating with the Government officials at MOALD and PQPMC through discussion with the FAW Technical committee for increasing availability of IPM recommended technology for FAW management like pesticides, lures, and other agriculture inputs at local agrovets during lockdown situation. Additionally, CBFs are also coordinating and working with local agrovets for delivery of agricultural inputs to the farmers at the community level. They are also coordinating with the respective Palikas to facilitate technical services to the farmers of the respective districts.

FTFNIPM is funded by the [U.S. Agency for International Development](#) and housed at the [Center for International Research, Education, and Development](#) at Virginia Tech. Locally, the project is implemented by [iDE Nepal](#) and Nepal Agricultural Research Council (NARC)