



# FEED THE FUTURE

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



## Annual Report (Jan–Sept 2020): Feed the Future Nepal Integrated Pest Management

Submitted to  
United States Agency for International Development (USAID)



## Project Overview

<b>Program Name:</b>	Feed the Future Nepal Integrated Pest Management (FTFNIPM) project
<b>Activity Start Date and End Date:</b>	Start Date: Nov 15, 2019 End Date: Nov 14, 2022
<b>Name of Prime Implementing Partner:</b>	Virginia Tech
<b>[Contract/Agreement] Number:</b>	72036720LA00001
<b>Name of Subcontractors/ Sub awardees:</b>	International Development Enterprises, 451622-19947, National Agriculture Research Council
<b>Geographic Coverage (cities and or countries)</b>	Nepal FTF zone of influence
<b>Reporting Period:</b>	January-September, 2020

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### **FTFNIPM/NARC**

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AO – Marva Butler, USAID, Maharajgunj, Kathmandu, Nepal  
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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	Corona Virus Disease
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
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 project activities accomplished during the period from January to September 2020. FTFNIPM was not able to implement its field level activities, as the government restricted movement due to COVID-19. In spite of the global COVID-19 threat and the lockdown situation, the project was able to conduct some of the coordination & collaboration meetings with different stakeholders. Likewise, virtual Skype meetings with the taskforce team, capacity building on IPM packages for rice, lentil, and vegetables, and trainings on pesticide handling and parasitoids rearing took place.

### Key Project Highlights During Reporting Period:

- a. **FTFNIPM Project Inception Workshop:** The project inception workshop was organized on January 17, 2020 for the kickoff of this project in Nepal. High-level government dignitaries, USAID team, Feed the Future/USAID projects, and many INGO/NGO, FAO, private sector representatives, and IPM experts participated in the event.
- b. **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. FTFNIPM organized six virtual meetings with the USAID FTF FAW Taskforce committee.
- c. **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, a pesticide expert from Virginia Tech, was the resource person for this event. This event was organized in 3 successive days and focused for the central provincial level government and development project staffs, private sector agro vets, USAID collaborators from Cambodia and Bangladesh, and interested participants. The webinar aimed to make the audience aware of the impacts of pesticides and its uses on suitable pests and diseases.
- d. **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.
- e. **FTFNIPM Project Steering Committee:** FTFNIPM contacted and coordinated with the 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. FTFNIPM organized a virtual meeting with the Agriculture Secretary and key official from Ministry and the Director General of the Department of Agriculture to brief about project. The Ministry has informed that MOALD has made a decision for FTFNIPM project to be included in the existing USAID FTF steering committee which will be officially communicated after Dashain festival.

- f. **Rearing and Release of FAW Egg Parasitoids:** Following the GON's decision to relax national lockdown 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 has 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.
- g. **Response to Global COVID-19 Pandemic:** Due to the global COVID-19 pandemic, the majority of FTFNIPM's planned activities for this year have been disrupted. In spite of this situation, the FTFNIPM implementation team has been coordinating closely with USAID/Nepal and the Government of Nepal (GON), and organizing virtual activities and disseminating information via digital technologies.
- h. **Rice IPM Package Webinar:** This year FTFMIPM successfully organized and IPM Package for Rice webinar using an online platform. The webinar on the Rice IPM package was organized jointly by the PQPMC and FTFNIPM project, which helped in strengthening the capacity of Nepal's agricultural experts working on plant protection to safely, effectively, and sustainably respond to and manage existing and emerging threats to rice crops.
- i. **Webinar on the Mass Rearing of FAW Parasitoid Organized:** After frequent and regular consultation and coordination meetings with different partner organizations (NARC, PQPMC), the webinar on FAW egg parasitoid rearing was successfully conducted jointly with PQPMC, NARC-National Entomology Research Center (NERC), and FTFNIPM/iDE Nepal with technical support from Virginia Tech.
- j. **Lentil IPM Package Webinar:** The FTFNIPM /iDE Nepal successfully conducted a Lentil IPM package webinar in coordination and collaboration with VT, PQPMC/MOALD, Grain legumes Research Program (GLRP)/NARC, CIMMYT, and USAID FTF IPs (K2, NSAF).

## Major Activities Accomplished

### *FTFNIPM Project Inception Workshop*

The project Inception workshop was organized on January 17, 2020 for the kickoff of this project in Nepal. High-level government dignitaries, the USAID team, Feed the Future/USAID projects, and many INGO/NGO, FAO, private sector representatives, and IPM experts participated in the event. An open discussion session was organized for input/feedback on the project implementation and coordination and collaboration was discussed in the forum.

### *USAID Post-Award Orientation Meeting*

The project post-award orientation meeting was organized in USAID Nepal Mission on January 16, 2020. During the meeting, the discussion was on the role of iDE and the delay in signing an MOU between iDE and Virginia Tech for the sub-award. The meeting clarified procedures to facilitate award implementation, achieve clear and mutual understanding of the award requirements, clarify roles, responsibilities, and procedures, and question-answer and resolve potential problems. The topics covered during the post-award meeting were a) award review; b) rules and responsibilities of



Agreement Officer; Acquisition and Assistance Specialist; Agreement Officer's Representative; Office of Financial Management; Development Outreach and Communications, and Monitoring, Evaluation, and Learning; c) Implementing partner's roles and delegation of authority; d) Questions and answers

### *Review of the Workplan*

In year 1, FTFNIPM had a series of consultations with the Ministry for review and endorsement of the work plan. FTFNIPM team 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 MOALD with necessary project documents for including FTFNIPM project in the FTF project steering committee, since there is already an existing steering committee formed for FTF project. As per the suggestion from the Under Secretary MOALD, FTFNIPM should make a presentation on the project and update activities. On Tuesday, September 8, 2020, FTFNIPM finally organized a virtual meeting with the Agriculture Secretary. High officials from the Ministry, Department, NARC, PQPMC, and Development Cooperation coordination section of MOALD (DCCS) were present in the meeting. FTFNIPM CoP Komal Pradhan presented a PowerPoint giving an overview of the FTFNIPM project and work plan activity updates, and also proposed that the FTFNIPM project be included into the existing USAID's FTF steering committee and form another technical sub-committee under the Chief of PQPMC if required. The Agriculture Secretary in his remarks gave positive thoughts on this. However, Shankar Sapkota wanted to review the bilateral agreement between Nepal Government and USAID, and as requested, FTFNIPM has also submitted the project implementation letter, which is signed both by the USAID Mission Director and Joint Secretary of the Ministry of Finance on behalf of the Nepal Government. We have been following up with MOALD on this. In the month of September, Dr. Hari KC was given new responsibility in the ministry as Joint Secretary for Planning Division and FTFNIPM is coordinating with him at the Ministry level. The Ministry has informed that MOALD has made a decision for FTFNIPM project to be included in the existing USAID FTF steering committee which will be officially communicated after Dashain festival.

### *FTFNIPM Year 2 Workplan Draft Submitted*

With consultation and guidance from Dr. Muniappan and the Virginia Tech team, a draft of the Year 2 annual work plan document was prepared and submitted to Dr. Muniappan/VT team for review and finalization. Further comments/inputs from VT were incorporated and the work plan was finalized. It has been submitted by Dr. Muniappan to Lynn Schneider, AOR USAID Nepal Mission on September 22, 2020, for approval.

### **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 the 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.

Due to the COVID-19 situation, the proposed farmer survey to assess IPM adoption to date on the targeted crops which was planned last year is now planned for the Year 2 Spring. A Master's student at Virginia Tech and the iDE team from Nepal has developed a draft questionnaire that addresses the objective of the study. Similarly, with support from the iDE field team, various information on Districts, Municipalities, and so on was collected. After the sampling, VT team provided us that information for

further information collection. FTFNIPM has sampled districts, municipalities, and wards, and plans to collect this information on households as soon as possible.

*Task 2:* Develop a financial model (decision-making tool) that can be applied by farmers and is tailored to commercial and smallholder farmers while addressing the unique constraints and circumstances of women, youth, and marginalized groups.

*Activity 1* – Begin the design of a 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.

Due to the COVID -19 situation, FTFNIPM was not able to implement this activity in time. Starting from August 2020, a team comprising of Mr. Ashta Prajapati (Supply Chain Coordinator), Mr. Rabindra K. Karki (Coordinator-Water Resource and Engineering), and Mr. Arun Limbu (M&E Coordinator) were assigned to conduct a Human-Centered Design (HCD) Deep Dive Study to come up with a recommendation for a decision-making tool that can be well adopted by our targeted beneficiaries for choosing appropriate IPM tools and techniques.

HCD is a leading qualitative innovation methodology that maximizes the likelihood of adoption, long-term sustainability, and scalability of a market-based solution. It is used to design and deliver holistic offerings – usually a combination of product(s), service(s), marketing, financing, and distribution. HCD utilizes an ethnography-like approach to deeply understand the latent user and stakeholder needs and combines this with design methods and expertise from product design, industrial design, business design, service design, and marketing strategy. The result is a market-based solution that is transformative, desirable, accessible, usable, maintainable, and affordable to consumers, in addition to being technically feasible and economically viable for stakeholders in the market-system. HCD is a best practice amongst the world’s largest (market-based) consumer goods and services firms and has gained recent credence in the development sector as a means to improve the ROI (return on investment) as well as the probability of scale and sustainability of market- based initiatives.

HCD consists of three phases—

1. Hear—Listen to the needs, aspirations, barriers, and motivators of everyone involved.
2. Create—Explore multiple ideas and test them quickly, through simple prototypes, to arrive at a desirable and feasible solution.
3. Deliver—Design a viable business model that will sustainably deliver the product or service to customers.

The major objective of this study is to understand users’ behaviors, desires, motivations, and pain points in order to design the proper learning system for IPM. These insights will allow the team to recommend an inspirational tool with messaging design to more effectively meet farmers’ requirements to decide which specific IPM practices in IPM packages best fit for their crop plot.

The following two activities have been carried out under the first phase (Hear) of this work:

*Stakeholder Mapping:* It includes vigorous discussion to identify the key stakeholders and other direct stakeholders, and the local, national, and international community influencing those stakeholders. Smallholder farmers being the key stakeholders it's been identified that Community Business Facilitators (CBF)/Plant Doctors and local agro-vets are other direct stakeholders we need to focus on for such decision-making tools.

*Expert Interview:* Following the stakeholder mapping, the team has done some expert interviews on various aspects of IPM implementation i.e. promotional materials, productivity, existing IPM tools and practices, embedded services, and training. Due to the pandemic, the team utilized virtual/telephonic conversation for an expert interview.

The next step to this will be developing a questionnaire guide for stakeholders' interviews and conducting interviews. After synthesis and analysis of those interviews, the team will be able to come up with a recommendation for an appropriate decision-making tool to be created. A draft prototype will be developed by the end of the first quarter or at the start of the second quarter of year 2.

*Task 3:* Project the impacts of FAW in Nepal over the next three years in collaboration with stakeholders.

FTFNIPM is collaborating and working with PQPMC to project the impact and spread of FAW in Nepal. PQPMC thru its FAO Technical support project is monitoring and reporting FAW status in province 2 and Gandaki pradesh, whereas Province 1 has been monitored by Helvetas support program and we are monitoring the FAW status in FTF ZOI area with coordination and collaboration with FTF IPs thru USAID FTF's FAW taskforce committee meetings. This will be continued in the YR2 and YR3 period of this project.

*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 as to spread information through a variety of media on the benefits of IPM practices and packages for the target crops.

During the global COVID-19 pandemic, FTFNIPM has developed an SMS system through which farmers are able to get information on different plant-related diseases and pests. SMS is helping these farmers to manage problems with the solutions provided through the system. Throughout the year, FTFNIPM has sent multiple SMS to these farmers as they are not getting access to this information through normal means due to COVID-19. The messages are delivered on a weekly basis. This information can help farmers overcome their pest problems on time.

A common USAID project IPs communication material (FAW fact sheet in the Nepali language) on FAW has been developed for mass awareness campaigns. The material is being used in training and workshops at provincial and local levels.

FTFNIPM has disseminated information to farmers and technical personnel through different media and video clips on social media. Altogether, 5 local FM, 2 national-level radio, 4 newsprint, and 2 national

television outlets had covered technical advice related to FAW management during this lockdown period.

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

*Task 1: Support Taskforce*

Before the invasion of FAW in Nepal, USAID’s FAW Taskforce committee was formed with coordination and collaboration of KISAN-II, NSAF, F2F, PAHAL, SABAL, Suaahara II, IPM IL and Navin Hada from USAID Nepal Mission. FTFNIPM project is taking the lead for coordinating and managing this taskforce team.

In Year 1, there were 6 FAW taskforce meetings organized for the preparedness and management of FAW in USAID's FtF ZOI 25 districts of Bagmati Pradesh, Province # 5 (Butwal), Karnali Pradesh, and Sudhur Paschim Pradesh. The agenda for the meeting and the agreed points within the year one is listed in the table below.

**Table 1: Agenda and the agreed points**

Date	Agenda	Agreed	Remarks
(Jan–Mar) 2020	<ol style="list-style-type: none"> <li>1. Review on the current status of FAW in the field by respective projects</li> <li>2. To share and discuss on the FTFNIPM project work plan activities and proposed modality of field implementation in coordination and collaboration with FtF project partners (KISAN and NSAF)</li> <li>3. To promote and scale the recommended IPM technologies and practices in the USAID 25 districts</li> <li>4. Preparation and planning for the management of FAW in spring and summer maize</li> </ol>	<ul style="list-style-type: none"> <li>● USAID task force team will also work as a project coordination committee for FTFNIPM.</li> <li>● Proposed training for vegetable IPM (Tomato and Cucurbits) was postponed for further two weeks</li> <li>● TF will do the same Skype-Zoom call for the technical recommendations for any FAW issues in the field.</li> <li>● In consultation with the KISAN II, NSAF and IPMIL will come up with a plan of action to energize the government taskforce too.</li> <li>● Once the branding and the author will be clear it will be immediately printed as per the last meeting</li> <li>● Currently, 3,000 lures available with the Co. cost ranges from NRP.</li> </ul>	

	<ul style="list-style-type: none"><li>5. Update on status of FAW factsheet</li><li>6. Update on availability of FAW lure</li></ul>	80-90 depending on the number of demands.	
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<p>(Apr-Jun), 2020</p>	<ul style="list-style-type: none"> <li>● Dan McGrath to conduct Virtual training thru Zoom or other means on FAW for FtF IPs projects staffs and Government stakeholders</li> <li>● FTFNIPM's proposed virtual activities during COVID situation coordination and collaboration</li> <li>● The recent updates of FAW infestation in 25 districts of FtF ZOI.</li> </ul>	<ul style="list-style-type: none"> <li>● FTFNIPM to prepare a concept note on hiring Dan and submit to F2F/ CRS and Phaindra from F2F will coordinate with Dan to organize the first training for field staff</li> <li>● SMS text message to FtF project's FAW focal person and Kisan Grantee agro vets. Kisan-2 will disseminate SMS information to farmer thru their regular system;</li> <li>● Agreed to organize regular two-way communication thru virtual methods using Zoom with district and provincial level FAW focal persons. FTFNIPM will coordinate for organizing these Zoom meetings in coordination and collaboration with Kisan-2, NSAF, and F2F programs.</li> <li>● Agreed to do the FAW field survey and surveillance thru monitoring of low-density lure using FAW lure from Bangladesh and PIC lure</li> <li>● FTFNIPM will organize capacity building training to FtF field staff on Rice IPM, Tomato vegetable IPM and also share the recent threat on Desert Locust</li> </ul>	
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(Jul-Sep),2020	<ul style="list-style-type: none"> <li>• The meeting mainly discussed sharing the field status of FAW/Locust</li> <li>• Planning for FAW management and surveillance/monitoring plan for the upcoming winter maize crop which will be planted in October/November in Terai district.</li> </ul>	<ul style="list-style-type: none"> <li>• FTFNIPM presented and shared the draft YR2 Work plan for inputs and comments from the team members. The FTF IPs provided some inputs and suggestions which were also incorporated into the FTFNIPM YR2 work plan.</li> </ul>	
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#### *FAW Technical Committee Meeting at MOALD*

The Senior Technical Specialist of the FTFNIPM project, Lalit Sah, attended the FAW technical committee meeting under a high-level FAW taskforce team held at the Ministry of Agriculture and Livestock Development (MOALD), Kathmandu under the chairpersonship of Joint Secretary of MOALD and chairpersonship of the technical taskforce, Dr. Hari Bahadur K.C Date: 2076/11/21(March 4, 2020, Wednesday). Altogether there were 11 participants (M/F: 10/1). The detailed meeting discussions are given below:

- To coordinate all the efforts being made by stakeholders of government and non-government organizations on the management of FAW, which is established as a major pest of maize crop, to produce synergy in preventing the potential economic loss of maize crop in the incoming season?
- To request Plant Quarantine and Pesticide Management Centre (PQPMC) for approving the jurisdiction of the IPM protocol, surveillance protocol, and plan of action developed by the taskforce for sustainable management of FAW in the country.
- To request PQPMC to coordinate with provincial government and development partners, I/NGOs for the collection of official statistical data on the spread and infestation of FAW in Nepal as per the framework of surveillance protocol. The PQPMC will coordinate with the respective I/NGOs, provincial government for timely submissions of the report on FAW updates. The compiled monthly reporting of this activity will be finally submitted by PQPMC to MOALD by the first week of each month.
- To request development partners, I/NGOs like FAO, CIMMYT, iDE, HELVETAS to coordinate and organize national level sharing workshops on management strategies and ways forward developed by each of the organizations to fight against FAW pest.

- To request CIMMYT for piloting of the Open Data Kit (ODK) Mobile App supported by the Government of Bangladesh in NSAF (CIMMYT) project's Zone of Influence (ZOI) for ease in the collection of official statistical data on spread and infestations of FAW.

### *High-level FAW Taskforce Meeting*

In Year 1, FTFNIPM participated in 3 events of high-level FAW taskforce meetings. The first event was organized on March 4, 2020, where FTFNIPM Senior Technical Specialist Lalit Sah attended the meeting held at the Ministry of Agriculture and Livestock Development (MOALD), Kathmandu under the chairpersonship of Joint Secretary of MOALD and chairpersonship of the technical taskforce, Dr. Hari Bahadur K.C. The meeting discussed efforts being made by stakeholders of government and non-government organizations on the management of FAW and to produce synergy in preventing the potential economic loss of maize crop in the incoming season. Through the meeting, Plant Quarantine and Pesticide Management Centre (PQPMC) requested approval for the jurisdiction of the IPM protocol, surveillance protocol, and plan of action developed by the taskforce for sustainable management of FAW in the country and requested CIMMYT for the piloting of the Open Data Kit (ODK) Mobile App supported by Government of Bangladesh in NSAF (CIMMYT) project's Zone of Influence (ZOI), for the ease in the collection of official statistical data on spread and infestations of FAW. Finally, the taskforce team requested development partners, I/NGOs like FAO, CIMMYT, iDE, HELVETAS to coordinate and organize a national level sharing workshop on the management strategies and ways forward developed by each of the organizations to fight against FAW.

On July 20, 2020, the Ministry of Agriculture called for a meeting with the high-level FAW taskforce committee, where Mr. Rajendra Prasad Bhari, Agriculture Secretary chaired the events. This was the first meeting of the FAW taskforce team for the new secretary after he joined the MOALD. FTFNIPM Senior technical specialist, Lalit Sah, and Hari Kumar Shrestha from NSAF jointly represented FTF USAID's project in the meeting. The FTF team jointly presented the field update on FAW from FTF ZOI 25 districts, representing the USAID FTF project. In the meeting, PQPMC chief Sahadev Humagain highly appreciated FTFNIPM/iDE joint effort in organizing the pesticide handling and safety webinar and also informed in the meeting that the iDE/FTFNIPM project together with the PQPMC is organizing the Rice IPM Package webinar with support from Dr. Muniappan and three International speakers—2 IRRI scientists and one retired rice entomologist from IRRI—on July 30th, 2020 Thursday. MOALD and PQPMC have agreed and confirmed the dates of their participation in the Rice IPM webinar.

On Tuesday, September 8, 2020, FTFNIPM finally organized a virtual meeting with the Agriculture Secretary. High officials from Ministry, Department, NARC, PQPMC, Development Cooperation coordination section of MOALD (DCCS) were present in the meeting (Secretary- Mr. Rajendra Prasad Bhari, Joint Secretary-Dr. Rajendra Mishra (Partly), Joint Secretary-Dr. Hari KC, Director General/DOA Dr. Rewati Raman Poudel, PQPMC Chief-Mr. Sahadev Humagain, NARC/ National Entomology Research center Chief-Dr. Premnidhi Sharma, Mr. Shankar Sapkota and Binod Gyawali from MOALD's Development Cooperation coordination section and Corey O'Hara, Lalit Sah and Komal Pradhan from iDE/ FTFNIPM project). FTFNIPM CoP Komal Pradhan presented a PowerPoint giving an overview of the FTFNIPM project, work plan activity updates, and also proposed that the FTFNIPM project be included in existing USAID's FTF steering committee and form another technical sub-committee under the Chief of PQPMC if required. The Agriculture Secretary in his remarks gave positive thoughts on this. However, Shankar Sapkota wanted to review the bilateral agreement between Nepal Government and USAID, and as requested, FTFNIPM has also submitted the project implementation letter, which is signed both by



the USAID Mission Director and Joint Secretary of the Ministry of Finance on behalf of the Nepal Government. We have been following up with MOALD on this.

### *Provincial Level Taskforce Meeting*

FTFNIPM CoP Komal Pradhan and Senior Technical Specialist Lalit Shah attended FTF project Provincial level FAW taskforce virtual meeting in Province #5 (Butwal) on Monday, July 6, 2020, which was organized by Sagar Kafle of CIMMYT, who is the provincial level FTF project focal person from CSISA/CIMMYT. The meeting was attended by all 10 district-level focal persons from province #5 to discuss and agree on the regular reporting of FAW and locust and field updates on the field situation now with FAW and locust.

*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 remus* at NERC Entomology Laboratory at Kathmandu and NMRP Laboratory at Rampur.*

During this year, the surveys conducted by Mr. Ajaya Bajracharya at the NERC Laboratory/NARC and Mr. Ghanashyam Bhandari at the National Maize Research Program (NMRP)/NARC at Rampur revealed the presence of egg parasitoids of FAW, including *Trichogramma* sp. and *Telenomus remus*, in Nepal. The confirmed parasitoids were from the surveys carried out in maize fields at Sindhuli, Nepal (N27o25.133', E85o51.758') from eggs collected and incubated in the laboratory at Kathmandu, Nepal. Some specimens were preserved in alcohol for identification by specialists and others were kept for multiplication. Specimens of these parasitoids have been sent to Dr. Gregory Evans, USDA/APHIS, Beltsville, Maryland for identification at species level. The results from the molecular analysis lab confirmed two parasitoids. They are (1). *Trichogramma chilonis* (99-100% identical to multiple specimens on Gene Bank) and (2). *Telenomus remus* (99.82% identical to multiple specimens on Gene Bank). The specimens collected in Nepal were 99-100% identical to multiple specimens in GenBank. Even at the end of this year, both the research stations had the continued survey in the Maize field for any new parasitoids. A research paper on identification of the egg parasitoids has been published (copy attached). Due to the current lockdown situation, surveys have been interrupted due to COVID-19 country lockdown.

Both the research stations (NERC and NMRP) have established the parasitoid rearing labs. Major ongoing activities in both research stations have been summarized below:

#### *National Entomology Research Center (NERC)/NARC, Khumaltar, Lalitpur*

Continuation of rearing of the egg parasitoid *Trichogramma* and host insect *Corcyra cephalonica* and fall armyworm.

### *National Maize Research Program (NMRP)/NARC, Rampur*

Strengthened laboratory (new wiring was done in both rearing rooms) for mass culture of the host insects and parasitoids. Four more boxes with new diet ingredients were set up for rearing of host insects (*Corcyra cephalonica*), which is required for the rearing of egg parasitoid (*Trichogramma chilonis*).

Host insect egg collection is ongoing from the Rampur research stations from the winter maize research plots. Collection and rearing of fall armyworm larvae from the field is ongoing. Mr. Ghanashyam Bhandari, the 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 scientists for review of SMS messages before delivery to the recipients.

In Nepal, it is time for the winter maize cultivation season and the FAW infestation on maize is increasing. At the later part of this Year 1 report, FAW has been reported from 46 out of 77 districts. This shows that this pest has reached across all the maize growing areas of the country. During the lockdown period, it was very difficult to manage this pest due to unavailability of the FAW management recommended tools, and pesticides at the right time as field movement is restricted. However, technical information has been provided to the farmers through telephone calls and print media. Mr. Bhandari has given an interview in Avenues Television on mass rearing for FAW parasitoids. TV interview Link: <https://www.youtube.com/watch?feature=share&v=sgDuKwHSfes&app=desktop#menu>

### *Insect Cage Importation from India for NARC Parasitoid Rearing*

Dr. Muniappan Rangaswamy, IPM IL Director from Virginia Tech, arranged to send insect cages manufactured in Taiwan from India to be used for parasitoid rearing in Nepal through NARC Khumaltar and Rampur. However, Nepal customs did not allow it. We have finally received all necessary documents for import and custom exemption from the US Embassy with support and help from Binita Rai and Navin Hada from USAID Nepal Mission. It took some time to process through the Government channels. We went through MOALD, Ministry of Foreign Affairs and Ministry of Finance without much success. Finally, USAID was able to get a tax exemption letter from MOFA and on September 29, 2020, the Embassy gave the Clearance letter for the custom of Raxaul. The shipment of 20 cages was received from the Customs Office and handed over to NERC and NMRP.

**Task 3:** Identify, organize, and implement FAW parasitoid rearing facilities in the ZOI.

This activity has been delayed due to the COVID-19 situation in the country and will be conducted in YR2 once the situation improves in collaboration and coordination with FTF IPs.

*Task 4:* Implement IPM packages and technologies currently available for vegetable, maize, rice, and lentil crops and validate and scale up in collaboration with KISAN II, CSISA, NSAF, and Farmer-to-Farmer programs in the ZOI.

This activity has also been delayed in the implementation of field validation due to COVID-19 situation. We have fielded in one field coordinator staff based at Nepalgunj to coordinate and collaborate for validation and scaling of recommended IPM technology and practices in the FTF ZOI in Year-2.

*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 training

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 the Government of Nepal and the Virginia Tech team. Tim McCoy, a pesticide expert from Virginia Tech, was the resource person for this event and he also reviewed the Nepal pesticide act and regulation, including a 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. R. 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.

On July 7 and July 16, 2020, the FTFNIPM organized the second and third round of webinars on pesticide handling and safety training by Tim McCoy to provincial and field level FtF project staff, Government stakeholders (Province and districts), and private sector agro-vets and others. More than 140 interested participants participated in this event, including participants from Cambodia and Bangladesh. There were altogether three sessions (one in June 2020 for high-level officials and two sessions in July month for field level extension workers) of the training that was organized and conducted using Zoom. On the final session on July 17, Dr. Muniappan Rangaswamy started the session with opening remarks, and the session was closed with few words from Corey O'Hara, iDE Country Director, and closing remarks by Sahadev Humagain, chief PQPMC with a vote of thanks.

*Safe Use Action Plan (SUAP) Preparation:* Lalit Sah from FTFNIPM has been working on the preparation of the draft document for the Safe Use Action Plan (SUAP) for FAW pesticide inclusion in Nepal PERSUAP. The draft document has been submitted to Dr. R. Muniappan for review, verification, and suggestions. After the document is verified, comments and suggestions are addressed, and then the final document will be submitted to Navin Hada, AAOR USAID, for finalization and approval.

*Task 6:* Collaborate with GON's PQPMC to fast track registration of safe and effective pesticides for FAW management that are not currently registered in Nepal.

One new pesticide-Spinetoram "delegates" recommended for FAW has been registered by PQPMC through fast track registration system. FTFNIPM is collaborating and working very closely with PQPMC for future fast track registration if any required. New pesticides for FAW will be accessed through agro vets and there will be coordination with PQPMC to facilitate the distributors for registration of those pesticides in YR2.

*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.

FTFNIPM has regular virtual communication and ongoing communication with the central level distributors, private companies, and the national level Pesticide Entrepreneur Association of Nepal team in order to assure the availability of pest lures and bio-pesticides even during the lockdown. FTFNIPM is 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 agro-vets during lockdown at the central, provincial, and local level.

*Task 8:* Involve youth in all activities of FTFNIPM and establish youth groups in the four provinces of the ZOI in collaboration with extension and value chain projects to produce *Trichoderma*-inoculated compost.

This task has been delayed due to COVID-19 situation. FTFNIPM has contacted one private sector Company called Prarambha Biotech Pvt. Ltd. in Kathmandu to coordinate and collaborate with youths in FTF ZOI for capacity building and involvement in technical backstopping and marketing of Trichocompost which is inculcated with *Trichoderma* spp.

**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 the implementation of FTFNIPM*

*Training on FAW management by Dan McGrath, F2F volunteer*

Three days of capacity building training on FAW management took place through the support of CRS company, who coordinated with Dan McGrath, a F2F volunteer expert on FAW. 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 project 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 the 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 the country.

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 the private sector agro-vets 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
  1. High-level technical team
  2. The 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 training)
  - FTF project staffs
  - Private sector (Grantee staffs/Cooperative members/Agrovets)
  - AKC staffs, Provincial lab staff, Provincial research station staff

The virtual training program also benefited other stakeholders, including development planners, ministries of Agriculture, policymakers, non-governmental organizations, agencies, professional associations, public and private enterprises, 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.

### *Rice IPM Package Webinar*

The webinar on the Rice IPM package was organized jointly by the PQPMC and FTFNIPM project on July 30, 2020 (Thursday). This webinar was supported by IPM Innovation Lab/Virginia Tech, USA and was jointly organized by PQPMC/MOALD and USAID-funded FTFNIPM/iDE Nepal with four international speakers from IPM IL, Rice Entomologist from IAPPS USA, and two speakers from International Rice Research Institute (IRRI), Philippines. This webinar helped in strengthening the capacity of Nepal's agricultural experts working on plant protections to safely, effectively, and sustainably respond to and manage existing and emerging threats to rice crops. Dr. Corey O'Hara, iDE Country Director, gave welcome remarks to all the participants of the webinar and thanked the PQPMC for all the support in organizing such a webinar on time. Also, Sahadev Humagain, Chief, PQPMC in his closing remarks appreciated all efforts of FTFNIPM for conducting such an important rice IPM webinar on time and thanked all the international Speakers for facilitating this webinar and also requested Dr. Muniappan for conducting such a webinar in the future too. He requested to organize a training on FAW parasitoids in Nepal. PQPMC is happy to collaborate to form any kind of collaboration on plant protection in the future too. This virtual webinar has guided development planners and policymakers to prioritize IPM strategies for rice. It also encouraged the FTF project staff, agricultural experts from the provincial government, and the Agriculture Knowledge Center to implement rice IPM strategies in their working areas. During this webinar, there were more than 150 participants participating from MOALD, provincial MOLMAC, USAID's Projects (KISAN II, NSAF, CISISA, and F2F, and IPMIL), professional associations, public and private enterprises, researchers, and academics in the webinar.

### *Virtual Training on IPM Package for Tomato*

FTFNIPM successfully conducted this event on August 12, 2020. For organizing this event FTFNIPM Senior Technical expert Lalit Sah coordinated with PQPMC and FTF IPs (K-2 and NSAF). The overall objective of this training was to build the capacity of FTF IPs project staff on tomato IPM Package recommendations. The whole event was organized virtually. The training included 68 participants where 67% were from development projects, 10% from the government sector, 8% of academicians, 6% of researcher/scientists, and 4% each from the private sectors and others. Lalit Sah (iDE Nepal), Mahesh Chandra Acharya (PQPMC), and Ram Krishna Subedi (PQPMC) facilitated and were resource persons in the training program. Corey O'Hara, iDE Country Director welcomed and highlighted the training event and objection in the opening remarks, whereas Sahadev Humagain, chief of PQPMC, gave a vote of thanks with concluding remarks.

### *Lentil IPM Package Webinar*

The FTFNIPM/iDE Nepal has also coordinated with PQPMC/MOALD, Grain legumes Research Program (GLRP)/NARC, and USAID FTF IPs (K2, NSAF) in organizing the Lentil IPM Package Webinar jointly. After a series of consultations, FTFNIPM finally confirmed to conduct the Lentil Webinar on September 30, 2020, at 7:45 am Nepal time. The flyer for the webinar has also been posted through the iDE Facebook pages to inform and encourage more participants in this webinar. There were altogether 5 speakers including two from VT/USA (Dr. R. Muniappan and Dr. Anamika Sharma), one from GLRP (Mr. Laxman Aryal) Nepalgunj, one from Bangladesh/CIMMYT (Dr. Moin Salam), and one from NSAF/CIMMYT Nepal (Dr. Hari K. Shrestha). In the webinar, iDE Country Director Dr. Corey O'Hara gave welcome remarks and Sahadev Humagain, Chief PQPMC gave a vote of thanks and closing remarks. Altogether there were 120 (M/F: 81/39) participants mainly from different organizations of Nepal. There were government employees 8%, development project IPs 28%, academicians/professor 1%, students 31%,

researchers/scientist/consultant 21%, private sector entrepreneur 2%, and others 1% participated in the lentil IPM package webinar

### *Webinar on the Mass Rearing of FAW Parasitoids*

For planning this webinar, FTFNIPM organized a number of consultations and coordination meetings with different partner organizations (NARC, PQPMC). On Friday, September 11, 2020, the webinar on FAW egg parasitoid rearing was conducted jointly with PQPMC, NARC-National Entomology Research Center (NERC), and FTFNIPM/iDE Nepal with the technical support from Virginia Tech. There were 6 presentations at the event. The main speakers for the event were Dr. Rangaswamy Muniappan, Director, IPM IL/Virginia Tech, USA; Dr. Malick Ba, Principal Entomologist, ICRISAT, Niamey, Niger; Dr. Tadele Tefera, Country Head, ICIPE, Ethiopia; Dr. Samira Abuelgasim Mohammed, Senior Scientist, ICIPE, Kenya; Ajaya Shree Ratna Bajracharya, Sr. Scientist, NERC/NARC, Khumaltar, Lalitpur, Nepal; Ghanashyam Bhandari, Scientist, NMRP/Rampur, Chitwan, Nepal. iDE Country Director-Corey O'Hara gave welcome remarks and Sahadev Humagain, Chief PQPMC gave a vote of thanks and closing remarks. Around 187 participants attended mainly from Nepal and also international participants from India, Bangladesh, Cambodia, and Vietnam.

*Task 2:* Provide technical support to PQPMC and other relevant entities to identify and alleviate constraints to registering and commercializing tools and products proven safe and effective.

This task has been delayed due to COVID-19. FTFNIPM had planned to invite Mr. Tim McCoy in YR1 for capacity building training on safe use of pesticides in Nepal. However, due to COVID-19, we organized virtual training. He also reviewed and provided inputs on the pesticide regulation/ pesticide guideline draft to PQPMC. After the FAW invasion in Nepal, PQPMC has registered Spinetoram "delegates" recommended for the FAW management.

*Task 3:* Provide technical assistance to PQPMC and other relevant MOALD entities, including those at the provincial and local levels, on strengthening institutional support for safe and effective management of threats to plant health.

This task is delayed until the COVID-19 threat is over. Through the Virtual means FTFNIPM is coordinating with the PQPMC in different Webinar where PQPMC staffs along with the Provincial level Agriculture Knowledge Center (AKC) staff also participated in the events.

*Task 4:* Strengthen Nepal's systems for monitoring and enforcing compliance with pesticide regulations.

This task is delayed until the COVID-19 threat is over.

### **GESI-focused Activities during Year I**

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 COVID-19 lock-down, but shifted to also include information being published on the gendered implications of COVID-19. 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

Initially, the GESI analysis was to include primary data-collection activities, originally scheduled for March 2020, including focus group discussions and semi-structured interviews with producers, farmer cooperative leaders and members, district agricultural staff, and local agro-vets. The research plan for primary data-collection activities was developed (budget and data collection tools); however, due to the ongoing global COVID-19 pandemic primary data collection activities were delayed indefinitely. Due to the persisting impacts of the COVID-19 pandemic throughout the project year, the GESI Team proceeded with adapting a selection for the GESI Analysis primary data-collection tools for use in the planned GESI-focused Technology Assessment (also originally planned for September 2020, but tentatively rescheduled for March 2021).

The FTFNIPM team has proceeded with conducting virtual key informant interviews and key informant interviews have been conducted with partners from KISAN II and additional interviews have been scheduled with NSAF staff from CIMMYT. With the persisting impacts of the COVID-19 pandemic, it has been challenging to conduct virtual interviews with project staff. Further, 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's empowerment and, iii) decision-making skills. The 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. Literature review and review of research papers is ongoing.

*Initial Key Preliminary Findings and Recommendations from the GESI Analysis are:*

- 1) There is a need for additional information on the factors that affect the ability of young women to pursue careers as CBFs in the agricultural supply chain. In response to this finding, FTFNIPM will further adapt the data collection tools associated with the planned GESI-focused technology assessment.
- 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. In response, FTFNIPM will, through planned special studies and routine learning activities, continue to explore how prevailing social norms and attitudes structure decisions about investing in improved agricultural practices, including IPM practices and technologies, can be integrated into the development and delivery of training activities and messaging.
- 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. Prior to the onset of the pandemic, FTFNIPM’s partner iDE was implementing community-based approaches that emphasized utilizing community public spaces and enabling environments where women were able to speak with other women to both socialize and discuss new agricultural practices, including IPM practices, technologies, and products.

4) Previous research conducted by the IPM IL and others have documented that women are significantly less aware of pesticide dangers than men and are exposed to pesticide residue through a variety of pathways. The importance of training and awareness programs to address safe handling practices and safety measures are well-recognized in Nepal. However, conventional training and capacity-building programs may still not improve the safety behavior of farmers, especially women and other marginalized groups whose access to agricultural information is constrained. Training activities coupled with Social and Behavior Change Communication (SBCC) may be more effective in advancing long-term changes in attitudes and practice. SBCC approaches are a core component of KISAN II’s intervention, so there are immediate opportunities where FTFNIPM and KISAN II could collaborate. FTFNIPM has and will continue to coordinate closely with KISAN II staff, especially KISAN II’s GESI Advisor.

5) Increasing evidence has demonstrated the efficacy of market system development and likewise the importance of inclusive market system development. Working with the private sector and “making the inclusive business case” is a common practice, but sustained change is limited if activities do not convince private sector stakeholders that engaging women and individuals from marginalized groups offers commercial benefits. KISAN II’s Buyer-Focused Approach does focus on working with input and service providers to better understand the unique needs and preferences of women farmers. As intended from the design of the project, FTFNIPM must coordinate with KISAN II, NSAF, and other FtF implementing partners to build upon established inclusive business models and developed “business cases” for gender and social inclusion that can be used to enhance access to and application of IPM principles, practices, and technologies.

#### *FTFNIPM GESI Analysis Gendered Implications of COVID-19*

Through the year, a number of activities were completed to expand GESI analysis to integrate the impact of COVID-19. These activities are ongoing to ensure that FTFNIPM integrates the most current evidence, learning, and good practices into project implementation.

- 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. This document summarized initial findings and recommendations for FTFNIPM on implementing a gender-responsive approach amidst COVID-19 recovery activities.

- Associated with FTFNIPM’s GESI Analysis, the FTFNIPM team met with the activity’s AOR (Lynn Schneider) 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.

#### *Collaboration with USAID/Nepal GESI Working Group*

- There have been two events of the USAID GESI working group on July 15 and September 16 with the GESI specialist in attendance. The meeting was attended by several gender specialists representing many organizations. Each organization shared the updates of activities and shared reports. FTFNIPM shared the project updates and the AgriLinks blog on “COVID-19 Disproportionately Affects Female Farmers in Nepal” to all the participants. For upcoming working group meetings, each organization will be requested to volunteer to do PowerPoint presentations to update on the progress of the GESI component of respective USAID Projects.
- Reviewed GON's Forest and Environment GESI Strategy shared by USAID GESI Advisor. Dr. Manju Tuladhar and FTFNIPM GESI Specialist provided comments to Chapter 4 of the strategy action plan section.
- Women Act organized a national Virtual Conference on “Gender Equality and Women’s Empowerment: Challenges and Measures to Equality, Participation, and Inclusion of Women and Girls in the Context of COVID-19.” iDE team participated in the virtual conference on Gender Equality and Women’s Empowerment held on Aug 13-14, 2020. On Day 1, the first panel presented on “Impact of COVID-19, issues, and strategies to protect human rights and enhance the access to justice of women in Nepal.” The second panel presented on “Gender-responsive Approach to Health Emergency and Disaster Management and Response in the Context of COVID-19.” On Day 2, the third panel presented on “Women's Economic Empowerment in the Time of COVID-19: Issues and opportunities for women's equal access to financial resources, employment, entrepreneurship, and livelihoods amid COVID-19 in Nepal.” The fourth panel presented on “Menstrual Hygiene Management and Women Empowerment amid COVID-19: Its importance, key challenges, and opportunities.” There were various presentations within each panel and on both days a large group of about 200 participants representing various organizations joined the conference. The main take-away from this workshop is many organizations shared their experiences and lessons learned working in GESI issues. The forum shared very useful policy documents, research articles, and journals such as the inclusion policy of the Ministry of Federal Affairs and General Assembly.

#### **Other important Events**

*The team from FTFNIPM participated in the 3-days "International webinar on Nutritious Maize"*

FTFNIPM participated in “Technologies, Development and Availability in South Asia” during July 21-24, 2020 (Tuesday-Thursday), which was organized by CIMMYT Nepal and Pakistan. The webinar highlighted the bio-fortified maize with ProVitamin-A (PVA), Quality Protein Maize (QPM), and Zinc. FTFNIPM has

coordinated with the National Rice Research Program in Hardinath, Dhanusha district for organizing Rice IPM training. A Zoom meeting was hosted by FTFNIPM for planning discussion with PQPMC and Dr. Muniappan organized this event on July 22, 2020 (Wednesday).

#### *USAID AgriLinks Webinar*

FTFNIPM Chief of Party Komal Pradhan and Senior technical expert Lalit Sah participated in the virtual webinar on "Youth, Women, and Market Systems Development in Agriculture and Supporting Markets" on Thursday, August 6, 2020 from 7.15 pm to 8:45 pm. Effective market systems development requires equitable participation and benefits for men, women, and male and female youth. A market systems development approach targets the root causes of poor market systems performance and enables market actors to achieve inclusive growth. Market systems development activities can use different approaches and levels of facilitation to ensure that they reach women and youth. In this webinar, the speakers share the findings from a landscape analysis and select case studies conducted by the USAID Feed the Future Advancing Women's Empowerment (AWE) Program implemented in the African Context. This webinar explores gender and youth-specific constraints and opportunities in agriculture and supporting market systems, and lessons learned about the gender- and youth-targeted market systems approach, including promising practices and both positive and negative unintended consequences. In addition, this webinar also shares examples from accompanying case studies that zoom in on interventions, approaches, and tactics used by implementing partners.

#### *FTFNIPM/IPM IL Photos for USAID's Feed the Future week*

FTFNIPM submitted six project field activity photos with captions and a paragraph of description to USAID Nepal Mission on September 10, 2020, for posting on social media (Facebook and Twitter) during the FTF week event.

#### *Desert Locust:*

FTFNIPM coordinated with FTF implementing partners (K-2 and NSAF/CSISA) for weekly updates on FAW and desert locust in FTF ZOI districts and provinces, which is being shared to FTF/IPs and Navin Hada in USAID Nepal Mission. Similarly, on July 20, 2020, Lalit Sah presented updates on locust at Ministry high-level FAW taskforce meeting after rigorously working with the field team on the collection of information on FAW and status updates on the locust. Nepal confirmed the first lot of swarms of desert locusts entered on June 27-30, 2020. Swarms of desert locust entered from Rupandehi, Bara, Parsa, Sindhuli, Makawanpur, Kapilbastu, Kailali, Dadeldhura, and Sarlahi. Nepal's bordering districts with India and 55 districts of Nepal have reported presence of desert locust. An article published in the local print media is attached.

#### *KISAN-II IPM Package on Rice Training:*

On Monday, Aug 11, 2020, Lalit Sah supported the event as one of the resource persons. The event was organized by K-2 for their Grantee private sector JT/JTAs. FTFNIPM technical experts facilitated the session on the following topic: "Rice IPM control measure packages of different insects-Natural enemies, Biocontrol agents, traps, etc".

### *Coordination/Collaboration with IPM IL Project (Main project)*

A team of professors from VT and Penn State University – George Norton, Ed, and Morgan –visited Nepal to review planning and also conduct technical backstopping for the Nepal team. In the planning discussion, the work plan and implementation strategy of **Objective-1** of the FTFNIPM project were also discussed and supported by the team, especially by George Norton who will be coordinating and supporting the Nepal team for its planning and implementation.

On January 30, 2020, the professors met with Deputy COP and Program Director of KISAN II in the KISAN office and discussed on the field implementation modality for the FTFNIPM project in coordination and collaboration with the KISAN-II project team in the field. Also, a coordination/consultation meeting was also organized with the Entomology Division of NARC on Thursday, January 30, 2020.

They also met with Abdu and Hari Shrestha of NSAF project and Sahadev Humagain-Chief PQPMC in their office on Friday, January 31, 2020, to discuss the working modality and the future collaborations with the FTFNIPM.

The professors also met with Lynn Schneider and Sujana Piya in USAID for a wrap-up meeting on January 31, 2020.

### *Consultation and Coordination Meeting with Project Stakeholders:*

A series of communications/discussions were organized with different project stakeholders—Dr. Yubak Dhoj GC, Secretary of Ministry of Agriculture and Livestock Development (MOALD) (January 8, 2020, Friday), Dr. Deepak Bhandari, Executive Director, Nepal Agriculture Research Council (NARC) (January 15, 2020, Wednesday)—and briefed on the FTFNIPM project. During Muni's trip to Nepal, a meeting was organized on January 17, 2020, with ED, NARC for briefing and discussion of project implementation, and the role of NARC in the project. NARC is also an implementing partner in this project for identification, field testing, and production of egg parasitoids for management and control of FAW. The Entomology Division at Khumaltar and National Maize Research Station (NMRS) at Rampur Chitwan will be involved in the parasitoids work in this project. Dr. Muniappan and Lalit also visited NMRP, Rampur after the inception workshop for meeting and discussion with NARC scientists and also did a field visit in FAW-infested sites in Gaidakot, Nawalpur district (January 18-19, 2020, Saturday-Sunday).

FAO has provided support funding to MOALD for implementation of FAW management in Nepal through the Plant Quarantine and Pesticide Management Centre (PQPMC). The FTFNIPM project is also coordinating with the FAO team (Dr. Binod Saha and Arjun Thapa) and PQPMC for working in close coordination and collaboration for managing FAW in Nepal with no duplication of activities and resources in the field. In this regard, FTFNIPM had a meeting with the Chief, PQPMC on Friday, January 31, 2020, for coordination and collaboration with the FTFNIPM project and FAO FAW program. For effective and timely supply chain development for FAW management in the country, TCPFAO/ PQPMC is coordinating with the private sector through the Pesticide Entrepreneurs Association of Nepal (PEAN) by sending a formal request letter to collect the present status of recommended IPM technology. For further coordination and collaboration with the private sector, FTFNIPM/iDE project will organize a private sector consultative meeting in Kathmandu for follow-up and develop a supply chain for making FAW IPM inputs available at the district and municipality level. FTFNIPM/iDE will also work with PEAN to facilitate and organize training for private sector agro-vet distributors at the regional level in coordination with regional PEAN organizations. In the meeting, it was discussed the importance and

need for coordination and collaboration among different stakeholders to address the threat of FAW in the upcoming maize season and agreed to assign the following organization for survey & surveillance work and IPM management of FAW. The assigned organization will be responsible for the coordination and collaboration of FAW surveillance, preparedness, and IPM management of FAW in the upcoming maize crop season in the respective province/s.

#### *Training on Awareness Creation, Identification, and Management of FAW:*

NSAF and CSISA/CIMMYT in coordination with the provincial level FAW taskforce and the Agriculture Development Directorate has accomplished the 2-days provincial level FAW technical awareness TOT training to project staff and Provincial Government staffs in Dang (February 16-17) and in Hetauda (February 19-20). The main objectives of the training were to create awareness among the provincial stakeholders on the potential threats and consequences of FAW in the province; strengthen collaborations and networking among stakeholders to contain the damage and spread of FAW in the province and beyond; share practical knowledge, lessons, and experiences on the identification and management of FAW in maize and other relevant crops based on IPM practices and develop the capacity of trainees in sharing their knowledge and information on FAW to farmers of their localities.

#### *Consultation with PQPMC and NERC*

In the consultation meeting, the team discussed the procedure for importing FAW lure and nano lure for testing in Nepal.

PQPMC Chief Sahadev Prasad Humagain suggested to follow up on all the quarantine processes for the import of any kind of lures and Nano lures. As an official procedure, it has to get an approval letter from the Ministry of Agriculture for importing any product for research & testing purposes which are not registered in PQPMC. However, Ajaya Shree Ratna Bajaracharya NERC mentioned in the past he has received these types of supplies for research/testing through an official request letter from the NERC to the Nepal Custom office.

#### *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) @ 6:20 PM onwards ([https://youtu.be/lk\\_9LeT1lVk](https://youtu.be/lk_9LeT1lVk)) 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 the current supply chain status due to the lockdown situations. He emphasized the 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 personal protective equipment (PPE).

#### *Participating in the FAMMEWS/Skype Training Organized by FAO Nepal*

On April 28, 2020, from 2:00 PM, 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.

#### *Desert Locust Sensitization Meeting*

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 Taskforce, 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/1HPIAmRxyg3N6FtEKAIyFmrnoHR2pOlc\\_/view?usp=sharing](https://drive.google.com/file/d/1HPIAmRxyg3N6FtEKAIyFmrnoHR2pOlc_/view?usp=sharing)

Some of the additional reference materials on this Desert Locust can be accessed from the below links:  
<http://tiny.cc/DL2020>

#### *Participated in the FAW Webinar:*

On July 30, 2020 (1:45 PM to 2:45 PM), Lalit Sah participated in the FAW webinar on “the challenge of managing fall armyworm: a new cross-industry pest in Western Australia” organized by The UWA Institute of Agriculture, Australia. The webinar was facilitated by Prof Helen Spafford and Adjunct Assoc/Senior Research Scientist, Department of Primary Industries and Regional Development.

#### *Stakeholder Community Meeting on Mitigating the Impacts of COVID-19 on Food:*

On July 30, 2020 (6:45-8:45 PM), Komal Pradhan and Lalit Sah participated in the webinar. The webinar was organized to explore how we can mitigate the impacts of COVID-19 on global food, nutrition, and water security, including through improved coordination between humanitarian and development actors and actions. In the webinar, more than 500 participants from around the globe participated. Country-specific data and examples from implementing partners, ACDI/VOCA, DAI, CORUS International, Helen Keller International, as well as a representative from the USAID Ethiopia mission participated in the discussion panels. NARC activities from FTFNIPM is also coordinating and consulting with the National Maize Research Program (NMRP) scientists and the Entomology Division Khumaltar.

### **Monitoring and Evaluation**

FTFNIPM has submitted all the USAID required quarterly reports in Year I. There were 3 quarterly reports and 9 monthly reports submitted to USAID. In Quarter 2, FTFNIPM mostly focused on preparatory works like inception, work plan development, coordination, and collaboration. In Quarter 2 and 3, FTFNIPM implemented capacity-building activities using virtual means like zoom, SMS, and so on. The list of reports submitted to VT is in the below table.

Reports	Quarter	Submitted to VT
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Second Quarterly Report	January-March, 2020	April 15, 2020
Third Quarterly Report	April-June, 2020	July 27, 2020

### Summary of Results to Date

#### *Impact of COVID-19 on Program Implementation (PIVOT log table)*

Due to the COVID-19 pandemic situation, the following planned activities this year have been postponed for Year 2. The postponed activities will be adjusted in Year 2 upcoming quarters after the COVID-19 situation normalizes. We will review the situation and every month submit this PIVOT table if the activities are postponed that are planned in the Year 2 work plan.

**Table 2: Impact of COVID 19 on the program implementation (PIVOT Log Table)**

Month	What changed?	Reason for the change
March 2020	The Year 1 Pesticide Safety Training and Workshops originally planned for March 2020 have been delayed indefinitely	The global outbreak of COVID-19 in 2020 has disrupted travel plans for FTFNIPM team members traveling from Virginia Tech to facilitate the proposed pesticide safety training.
March 2020	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.	The global outbreak of COVID-19 in 2020 has disrupted the event.
March 2020	Review currently registered pesticides in Nepal and safe pesticides used for the management of FAW in other parts of the world. We will assist PQPMC in the registration of safe pesticides that are not yet registered.	The global outbreak of COVID-19 in 2020 has disrupted the event.

September 2020	Involve youth in all activities of FTFNIPM and establish youth groups in the four provinces of the ZOI in collaboration with extension and value chain projects to produce <i>Trichoderma</i> -inoculated compost. Activity postponed to year II.  (Four youth clubs for production of Tricho-compost in each province of ZOI)	The global outbreak of COVID-19 in 2020 has disrupted travel plans for FTFNIPM team members traveling from Virginia Tech to facilitate activities.
July 2020	We will invite dealers of IPM tools such as pheromone lures and traps, bio-pesticides, chemical pesticides, and others to the FTFNIPM field days, meetings, and workshops to present and demonstrate their products as well as to encourage collaboration between them. We will include their products in our demonstration field trials. This activity has been postponed to Year II)	The global outbreak of COVID-19 in 2020 has disrupted the event
July 2020	IPM IL has developed, validated, and implemented IPM packages for vegetable crops in Nepal. IPM packages for maize, rice, and lentil yet to be validated are listed in Appendix I. Adoption of vegetable IPM packages will be scaled up in the ZOI in collaboration with KISAN II. The IPM packages for maize, rice, and lentil will be validated by conducting strategically placed side-by-side demonstrations in the ZOI in collaboration with KISAN II, CSISA, NSAF, and Farmer-to-farmer programs. The demonstrations and associated field days, workshops, meetings, and other extension events will consider the unique constraints, needs, and circumstances of low-resource farmers, women, youth, and members of marginalized groups, and will proactively include these groups in the activities.	KISAN II and NSAF have suspended field activities due to COVID-19. If the COVID-19 scare normalizes, the validation activities can be carried out in coordination with these projects.

### Target vs. Progress

In Year 1, FTFNIPM was not able to implement all planned activities due to COVID-19 situation, which hampered the project output. Similarly, the indicators we planned to collect through the annual survey were also impacted by the COVID situation. Incoming Year 2, FTFNIPM will implement all its monitoring and evaluation activities if the situation subsides or use alternatives to collect these indicators.



**Table 3: FTFNIPM Indicators, Targets, and Results**

Indicators	Base line FY 2020	Annual Target	Q1 FY 2020 Jan-Mar	Q2 FY 2020 Apr-Jun	Q3 FY 2020 Jul-Sep	Q4 FY 2020 Oct-Dec	Annual Performance Achieved to the End of Reporting Period (%)	On Target Y/N	Reporting
EG.3.2-24: Number of individuals in the agriculture system who have applied IPM practices with USG assistance	TBD	1000	-	-	-	-	0%	N	Annually
EG.3.2-25: Number of hectares under IPM as a result of USG assistance	TBD	500	-	-	-	-	0%	N	Annually
EG. 3.2: Number of individuals participating in USG food security activities as a result of FTFNIPM	TBD	400			144	70	54%	N	Quarterly
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

Custom: Number of persons trained with USG assistance to advance GESI-responsive IPM approaches and strategies through their roles or private sector institutions	TBD	35	0	-	-	-	0%	Y	Quarterly
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**Lessons Learned**

- Alternative methods of sharing IPM packages information with multiple sector stakeholders (FTF-IPs, Farmers, and others) through the use of different types of mass extensions (Bulk SMS, sharing information, and technical videos through social media webpage).
- Training using virtual means seems most cost-effective and acceptable by the audiences and stakeholders too
- Strong coordination and collaboration linkages established with the Government of Nepal.

**Challenges**

- The current lockdown of the country due to COVID-19 has disrupted the implementation of the planned training and collaborating activities on time.
- Field level activities were also affected by COVID-19 increased cases and regulations of the government in the country
- Invasion of the Desert Locust swarm from India was a concern.
- Not having initial studies for indicators might result in confusion on actual achievements.
- The number of participants taking part in the virtual Webinar meeting differs in registration and actual participation.

## Annex

### Annex 1: Success Stories

#### *Success Story 1: 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 has 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 training – 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 agribusinesses and other businesses remain closed. In order to reach women and other disadvantaged

groups that may have limited access to technologies like Smartphone, 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 adopt 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 agro-vets during a lockdown situation. Additionally, CBFs are also coordinating and working with local agro-vets for the 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)*

*Efforts on coordination and collaboration to fight against FAW by FTFNIPM/iDE Nepal*

USAID's Feed the Future Nepal Integrated Pest Management (FTFNIPM), introduced as a three-year project, aims to strengthen the capacity of Nepal's agricultural system to safely, effectively, and

sustainably respond to and manage existing and emerging threats to plant health by supporting inclusive transfer and adaptation of IPM technologies and packages for FTF projects focusing on value chains of vegetables, maize, rice, and lentil across the ZOI (25 districts in provinces 3, 5, 6 and 7) in Nepal through different USAID FTF projects and other stakeholders.

Given that FAW is a major new threat to plant health, iDE Nepal, as the consortium partner for the FTFNIPM project in Nepal, has been working in coordination with all the collaborative partners of the project as well as the government agencies to fight back against this pest. After the inception workshop on January 17, 2020, the project has been coordinating with all the involved partners from the government sector, NGOs/INGOs, and private sectors. The project has shared vision among all the collaborative partners who have expressed sheer determination to their roles for the project. iDE Nepal through the FTFNIPM project has been working in collaboration with the Ministry of Agriculture and Livestock Development (MoALD) by providing technical assistance under a high-level taskforce committee formed under the headship of the Secretary of MoALD on June 21, 2019, along with different stakeholders including Entomology Divisions/NARC. This taskforce has been making sound decisions to investigate the FAW in Nepal. This has been done to assure a collaborative approach by coordinating all the efforts being made by stakeholders of government and non-government organizations on the management of FAW to produce synergy in preventing the potential economic loss of maize crop in the incoming season. FTFNIPM has also been working in collaboration with other FTF projects to produce scientifically capacitated resource personnel to fight against FAW at FTF's ZOI at provincial levels. In February 2020, iDE Nepal coordinated with FTF projects NSAF and CSISA, Directorate of Agriculture Development, and Provincial FAW taskforce to provide technical assistance for training workshop on awareness creation, identification, and management of FAW at FTF ZOI and even conducted the training workshop on province 4.

In the future, iDE Nepal is determined to work in the same coordinated approach in developing and implementing strategies to strengthen the capacity of Nepal's agricultural system by enhancing the enabling environment for safe and effective plant protection. For this, a collective effort and broad mobilizations are needed to sustainably control this invasive pest.

#### *Success Story 2: "Virginia Tech, USAID partner to promote inclusive agricultural development in Nepal"*

Small-scale farmer response to crop pests and threats in Nepal will be strengthened thanks to a partnership between the U.S. Agency for International Development and Virginia Tech.

The new activity "Feed the Future Nepal Integrated Pest Management" prioritizes the transfer and adoption of integrated pest management (IPM) practices within Nepal's agriculture sector, including among members of marginalized groups. The three-year, nearly \$1.4 million activity will be implemented by Virginia Tech's Feed the Future Innovation Lab for Integrated Pest Management, in partnership with Nepal Agriculture Research Council and International Development Enterprises Nepal, two organizations working on the ground.

A key anticipated result is increased employment and professional growth opportunities for youth through the business development of Tricho-compost, a naturally occurring material that boosts plant defense mechanisms against threats. The activity will also support strengthening pesticide regulations

and will ensure that women, youth, and marginalized groups receive farmer training and agribusiness development related to IPM.

Pests and disease can cause up to 40 percent crop losses, which especially impacts small-scale farmers who own on average about one acre of land. With gender, caste, and ethnicity-based social exclusions widespread in the country, farmers often have limited access to improved technologies and increasingly rely on chemical pesticides, despite evidence of the negative impacts on human, animal, and environmental health.

“For agrarian countries like Nepal, pest infestation and subsequent production declines can have catastrophic impacts on farmers’ livelihoods and reduce economic growth,” said Adriana Hayes, USAID’s Nepal acting mission director. “This is why USAID designed this activity to empower Nepali farmers to effectively manage and reduce the impact of pest threats such as the devastating fall armyworm. The activity will capitalize on the government of Nepal and the Nepali private sector’s expertise and resources to institutionalize resilient and sustainable solutions to respond to future pest and disease outbreaks in the country.”

USAID partnered with the Virginia Tech team, now in its 26th year at the university, in part due to its more than decade-long tenure in the South Asian country. The team will maintain its objective of increasing food security in Nepal and implement sustainable pest management solutions for critical crops — such as maize, rice, lentil, and others — through close engagement with the government of Nepal and private companies.

“Productive, resilient, and prosperous growth should be within reach for every farmer around the globe,” said John Bowman, USAID agreement officer’s representative for the IPM Innovation Lab. “One of the best ways to achieve this in Nepal is by leveraging and building off of the established and emerging institutions already cost-effectively facilitating that work. This also brings us closer to fostering a ‘journey to self-reliance’ in the country.”

Management of the fall armyworm, an invasive pest that ravages maize and other crops throughout Asia and Africa, is also a focus area. The IPM Innovation Lab currently implements a biological control approach to manage the pest in East Africa that it will replicate in Nepal.

By connecting cooperatives, the private sector, rice mills, and other local groups in the country, the IPM Innovation Lab will disseminate natural enemies against the pest, an approach that is inexpensive, safe for the environment, and protects multiple crops including maize.

“The fall armyworm has already triggered billions of dollars of damage around the world, and we want to prevent it from wreaking more havoc for small-scale farmers,” said Muni Muniappan, director of the IPM Innovation Lab. “Releasing these particular natural enemies, which are both local to Africa and Asia, reduces the risk of introducing yet another exotic species that will cause harm.”

The IPM Innovation Lab is housed within Virginia Tech’s Center for International Research, Education, and Development, part of Outreach and International Affairs.

Written by Sara Hendery

[https://vtnews.vt.edu/articles/2020/02/outreach-VirginiaTechandUSAIDPartnerinNepal.html?utm\\_source=cmpgn\\_news&utm\\_medium=email&utm\\_campaign=vtUnirelNewsDailyCMP\\_022620-f%2Fs](https://vtnews.vt.edu/articles/2020/02/outreach-VirginiaTechandUSAIDPartnerinNepal.html?utm_source=cmpgn_news&utm_medium=email&utm_campaign=vtUnirelNewsDailyCMP_022620-f%2Fs) )

### *Success Story 3: FTFNIPM Conducted a Series of IPM Packages Webinars amid COVID-19*

In the midst of the COVID-19 pandemic, the FTFNIPM project continues to respond and address emerging and existing plant health challenges. The project has been identifying safer alternatives following the national safety guidelines of COVID-19 and putting efforts in endorsing the implementation of Integrated Pest Management technology in implementation sites through scientific capacity enhancement of USAID's FTF project staffs, agriculture experts from the provincial government, Agriculture Knowledge Center, coordinators from various non-governmental organizations, agencies, professional associations, public and private enterprises, researchers, and academics. The project has been collaborating with a government (Plant Quarantine and Pesticide Management Center/MoALD), IPM Innovation Lab/Virginia Tech, and other USAID's FTF IPs (NSAF, KISAN II, and F2F) for conduction of a series of webinars on IPM packages for various agricultural crops (Rice, Tomato, Lentil) along with training on Fall armyworm Management in Maize, Pesticide Safety, and Mass Rearing of Parasitoids of Fall armyworm.

The objective of the webinars is to provide guidance and technical knowledge to the target audience for prioritizing IPM strategies for crops in their area of work and to successfully maintain dissemination of technical information amid the COVID-19 pandemic. The webinars and training welcome national and international experts from across the globe, which provides participants the opportunity to learn from and interact with experts in particular fields. These webinars and training facilitate IPM technology transfer of various agriculture crops of national importance. The participants who are project and government staff from different parts of the country come together in a single platform to discuss their local issues in plant protection of various agricultural crops. The participants also get acquainted with global issues and technologies in agriculture. By October 2020, the FTFNIPM project was successful in conducting six important webinars with national and international experts and participants from different countries across the globe. Participants have directly benefited from webinars on IPM practices on various agriculture crops. The project will continue the series of webinars in the coming days and has aimed to attract a more diverse group of participants and experts globally.

## Annex 2: Additional Publications

### Popular Articles

- [Virginia Tech, USAID partner to promote inclusive agricultural development in Nepal.](#) *VT News*. 2-26-20
- [Biocontrol of Fall Armyworm: The Chain Reaction that Led to Regional and Cross-Continental Management.](#) *AgriLinks*. 3-19-20
- [IPM Innovation Lab and iDE maintain, increase plant protection services during global pandemic.](#) *CIREC Connect*. 6-1-20
- [COVID-19 response in developing countries: Virginia Tech team adapts agricultural services when farmers need them most.](#) *VT News*. 6-12-20
- [IPM Innovation Lab Hosts Virtual Pesticide Handling and Safety Webinars.](#) *IAPPS Newsletter*. 7-1-20
- [COVID-19 Disproportionately Affects Female Farmers in Nepal.](#) *AgriLinks*. 7-4-20
- [Virginia Tech partners with Nepal to provide virtual pesticide safety training.](#) *VT News*. 7-22-20
- [New Study Reveals Natural Enemies of Fall Armyworm in Both Asia and Africa.](#) *Entomology Today*. 7-23-20
- [Locust Invasion in Nepal.](#) *Spotlight Magazine*. 8-18-20
- [COVID-19 disproportionately affects female farmers in Nepal.](#) *CIREC Connect*. 10-26-20

### Scientific Articles

- Elibariki, Nsami, Bajracharya, Ajaya Shree Ratna, Bhat, Binu, Tefera, Tadele, Mottern, Jason L., Evans, Gregory, Muniappan, Rangaswamy, G.G., Yubak Dhoj, Pallangyo, Beatrice, Likhayo, Paddy. [Candidates for Augmentative Biological Control of \*Spodoptera frugiperda\* in Kenya, Tanzania, and Nepal.](#) *Indian Journal of Entomology*.
- Bajracharya, Ajaya Shree Ratna, Bhat, Binu, Sharma, Premnidhi, Sharma, Shashank, Pathour R., Meshram, Naresh M., Hashmi, Tasheen, Raza. [First Record of Fall Armyworm \*Spodoptera frugiperda\* \(J.E. Smith\) From Nepal.](#) *Indian Journal of Entomology*.

### IPM Packages

- [Lentils Package](#)



## Success Stories

- [Amid COVID-19, the IPM Innovation Lab Increases Virtual Learning Opportunities in Nepal](#)