

Feed the Future Innovation Lab for Integrated Pest Management

IPM IL

Policies and Operating Procedures (POPs) Manual

November 2017

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ACRONYMS

AOR – Agreement Officer’s Representative
APLU – Association of Public and Land Grant Universities
AVRDC – World Vegetable Center
CFR – Code of Federal Regulations
CG – Consultative Group
IL – Innovation Lab
EIAR – Ethiopian Institute of Agricultural Research
FAQ – Frequently Asked Questions
HAC – Health and Accident Coverage
HC – Host Country
IARC – International Agricultural Research Center
ICRISAT – International Crops Research Institute for the Semi-Arid Tropics
IITA – International Institute of Tropical Agriculture
IPM – Integrated Pest Management
IPP – Institute of Plant Protection
IRRI – International Rice Research Institute
KALRO – Kenya Agricultural and Livestock Research Organization
LDC – Less-developed Countries
M&E – Monitoring and Evaluation
M&IE – Meals and Incidental Expenses
ME – Management Entity
MOU – Memorandum of Understanding
NARI – National Agricultural Research Institute
NGO – Non-Governmental Organization
OMB – Office of Management and Budget
OIRED – Office for International Research, Education, and Development
OSP – Office of Sponsored Programs
PCC – Program Coordinating Committee
PI – Principal Investigator
PL – Principal investigator
POPs – Policies and Operating Procedures
RFA – Request for Applications
SEVIS – Student and Exchange Visitor Information System
TAC – Technical Advisory Committee
US – United States
USAID – United States Agency for International Development
USDA-APHIS-PPQ – United States Department of Agriculture Animal and Plant Health
Inspection Service Plant Protection and Quarantine Program
VCS – Visa Compliance System
VT – Virginia Polytechnic Institute and State University (Virginia Tech)

PURPOSE AND AUTHORITY OF THE POLICIES AND OPERATING PROCEDURES

The purpose of the Policy and Operating Procedures (POPs) is to ensure that the Feed the Future Innovation Lab for Integrated Pest Management (IPM IL) operates in a consistent and efficient manner to promote IPM research, training, and technology transfer.

Authority for Policy and Operating Procedures for the IPM IL is contained in the Leader-with-Associate Cooperative Agreement No. AID-OAA-L-15-00001, from the United States Agency for International Development (USAID) to Virginia Polytechnic Institute and State University (Virginia Tech). The Management Entity is located in the Office of International Research, Education, and Development (OIREED). The Cooperative Agreement document contains the Schedule, Program Description, Standard Provisions, Sample Associate Awards, and Program Administration and Implementation provisions. This Cooperative Agreement sets the authority for the IPM IL from 17 November 2014 to 16 November 2019.

In case of discrepancies between the Policy and Operating Procedures and the Cooperative Agreement, the Cooperative Agreement document takes precedence.

PROGRAM STRUCTURE AND MODE OF OPERATION

The goal of the FTF IPM Innovation Lab (IPM IL) is to deliver and diffuse IPM research and development results on commodities of high priority to USAID missions and value chain projects in Africa and Asia and in other regions when USAID missions request assistance. The IPM IL will reduce: (a) agricultural losses due to pests, (b) damage to natural eco-systems including loss of biodiversity, and (c) contamination of food and water supplies. It will also provide a replicable approach for increasing women's influence on IPM decision-making and program design. It will advance IPM science and information, develop IPM technologies, address invasive species, catalyze institutional changes, improve IPM communication and education, and proactively link to public and private entities that disseminate IPM knowledge and products. The results will be widespread adoption and impact of ecologically-based IPM technologies, practices, and systems.

By reaching these goals, the IPM IL program will directly contribute to the increase of the capacity of USAID and its partners to advance resource development and management practices that provide long-term social, economic, and environmental benefits.

Geographic Focus

The IPM Innovation Lab focuses its core resources on two groups of countries, one in Africa (Ethiopia, Kenya, and Tanzania) and one in Asia (Bangladesh, Cambodia, Nepal,

and Vietnam). In addition, the IPM IL will accept buy-ins and associate awards from USAID missions in countries outside as well as within those regions.

Asia

The Asia program will include two main IPM sub-programs: one focused on rice in Cambodia and a second on horticultural crops in Bangladesh, Cambodia, Nepal, and Vietnam. The Nepal program also includes a special focus on climate change and biodiversity.

Africa

The Africa program will include IPM for maize and chickpea in Ethiopia, rice and maize in Tanzania, and maize in Kenya and IPM for vegetable crops in Ethiopia, Kenya, and Tanzania.

In addition, the program also addresses emerging biotic threats to regional food security:

- Managing Invasive Species: *Parthenium hysterophorus* in East Africa
- Modeling Invasive Species: *Tuta absoluta* and *Aproaerema modicella*

The IPM IL has seven program objectives:

- Special Program on Rice IPM
- Role of IPM in Sustainable Intensification and Environmental Sustainability
 - Sustainable Intensification
 - Crop Varietal Diversity
 - Global Climate Change
- Building Critical Skills Areas in IPM: Adaptive Research to Build IPM Packages for Mission Value Chain Programs, Plant Disease Diagnostics, IPM Best Practice, and Pesticide Safe Use.
- Research on IPM Delivery Techniques: How can the IPM research community better support extension of IPM to the smallholder farmer through public, private, and community-based mechanisms?
- The Role of Gender in IPM Research and Development.
- Emerging Biotic Threats to Regional Food Security
- Nutrition and Health

In order to accomplish these program objectives, IPM IL activities will include ecologically-based, participatory programs in which:

- 1) Baseline information will be gathered on key pests, natural enemies, existing pest management systems, local pest management knowledge, and constraints to technology adoption. Baseline surveys and participatory appraisals in focal districts for the target crops within the target countries will be completed as well as reviews of existing literature and data.
- 2) Social, economic, education, policy, regulatory, and other institutional factors affecting pest management will be identified in each target country. Information will be gathered on complementary mission-supported programs, NGOs involved in IPM

training, private enterprises involved in commodity marketing and input supply, and community-based organizations.

- 3) Collaborative on-farm research will be undertaken to design, test, adapt, and evaluate IPM practices, packages, and strategies. Concurrent socioeconomic research will be used to identify (a) optimal, gender-sensitive approaches for scaling up IPM adoption and (b) assessing social, gender, environmental, nutritional, and economic impacts of the IPM IL.
- 4) A comprehensive plan will be developed and implemented for (a) raising awareness about IPM, (b) disseminating IPM practices and packages to farmers, (c) improving local capacity to diagnose IPM problems and to conduct IPM research, and (d) spreading IPM knowledge regionally and beyond.
- 5) Results of analyses of social, economic, policy, regulatory, and institutional factors will be used to design and implement an action plan for influencing policies and regulations that affect the viability and spread of IPM in the target countries.

Key IPM outcomes include:

- Advancement of ecologically-based participatory IPM science, with ecologically-based IPM technologies, information, and systems for managing key pests on important crops in Africa and Asia.
- Improvement of IPM communication, increase in capacity of host-country scientific and outreach institutions, enhancement of ability of practitioners to manage IPM knowledge, and fostering of widespread adoption of ecologically-based IPM technologies, practices, and systems, with measurable impacts.
- Increased capacity of local/national institutions to reform and strengthen policies that influence pest management.
- Development of sustainable, resource-based local enterprises and integration into regional, national, and international markets.

IPM IL Organizational Structure

The Management Entity (ME) for the IPM IL is located in the Office of International Research, Education and Development (OIREED) at Virginia Tech. The ME is accountable to USAID for the IPM IL, both programmatically and fiscally.

Certain programmatic and fiscal responsibilities are delegated by the ME to participating U.S. and host country institutions through subawards for collaborative research programs between individual U.S. scientists and their host country counterparts.

The **Program Coordinating Committee (PCC)** is the internal advisory body comprised of the ME leadership team, and PIs from all the projects. The PCC will meet once a year, and its primary objectives are to:

- Review annual work-plans with respect to scientific and indicators relevance and make related recommendations to the external Technical Advisory Committee (TAC);
- Validate performance indicators and monitor activity progress toward targets;
- Ensure close collaboration between on-the-ground activities; and

- Provide input on the overall program policy and budget.

Meetings

To carry out its responsibilities, the PCC is expected to meet once a year either face to face, via conference call, or via video conference. PCC members may also participate in electronic conferences at other times of the year. Meetings may be called by the PCC Chair or the ME. Participation by at least 50 percent of the PCC members is considered a quorum for transaction of business, and a simple majority of members present is required for decisions by the PCC.

Action without Meeting

Any action required or permitted to be taken by the PCC may be taken by a mail or email ballot without a meeting, if members of the PCC individually or collectively consent in writing to such a procedure. Actions duly taken without a congregated meeting shall be recorded and shall have the same force and effect as an action or resolution duly adopted at a meeting of the PCC.

Fees and Compensation

PCC members receive no compensation for their services on the PCC but external members may be offered an honorarium. PCC members will make provisions to include meeting costs in their respective budgets. In the event that a member does not have the necessary budget support, the ME will consider covering associated expenses.

Extent of PCC Authority

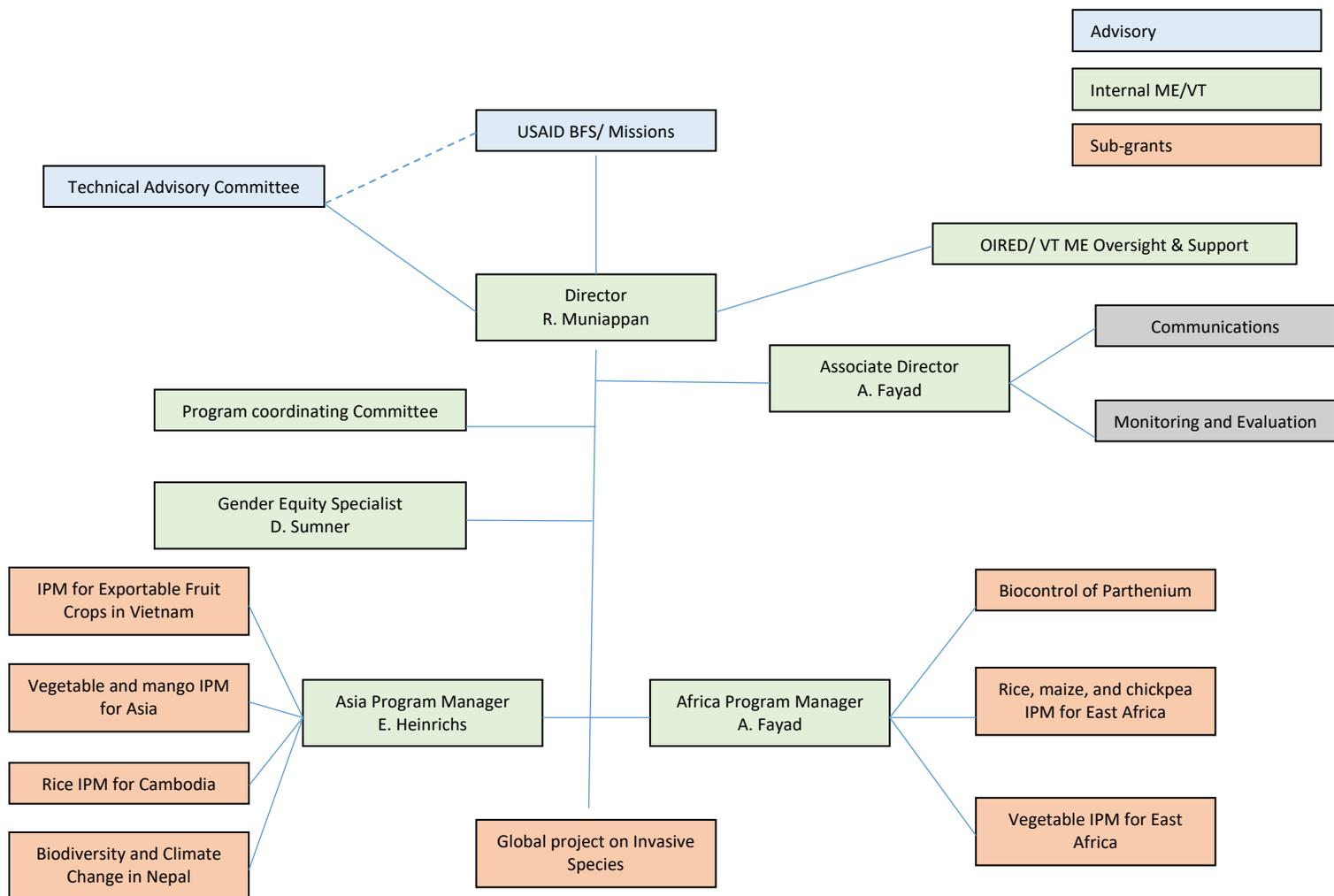
The PCC recommendations will be reported in writing to the ME and the TAC for further consideration.

The **Technical Advisory Committee (TAC)** will be external to the ME and comprised of recognized international experts from a broad spectrum of IPM-related fields. As an independent group that will provide strategic advice to the IPM IL, the ME will seek membership from the diverse set of agencies and institutions actively involved in IPM and related development issues.

Members will include a plant protection specialist, an economist, and a gender specialist. Members may come from universities, USDA, and appropriate CGIAR/IARC institutions (including AVRDC, CIMMYT, ICIPE, ICRISAT, IITA, CIAT, CIP, and IRRI). The USAID AOR will be a permanent member. The TAC meets face-to-face or virtually as required during year 1 (during the selection process) and once a year thereafter. The primary functions of the TAC are to:

- Oversee the program's progress and global approach;
- Review the PCC's recommendations to ensure that the IPM IL objectives are met and are aligned with USAID's Feet the Future and USAID mission priorities;
- Provide objective evaluation of research proposals on an as-needed basis; and
- Report finding and recommendations to the ME.

Collaborative research arrangements between participating U.S. and host country institutions are enabled by Memoranda of Understanding (MOU) between host country institutions and the IPM IL Management Entity or the lead U.S. institution. Establishment of MOUs are the responsibility of each IPM lead institution. MOUs formalize the means by which lead institutions and host country institutions initiate and carry out collaborative programs and specifies the conditions, responsibilities and resource commitments of the collaborating institutions. The MOU also creates the official environment under which “Host Country Activities” are identified and implemented. An MOU, however, is not a binding document, and does not commit USAID or any other institution to the allocation of resources. Nor does it replace the subcontract mechanism.



Management Entity

Purpose

The Management Entity (ME) is an institution with the legal status of a judicial body that administers the Cooperative Agreement from USAID and manages the IPM IL and its activities. The ME is ultimately responsible for the conduct of the cooperative agreement.

Responsibilities

The responsibilities of the ME include, but are not limited to:

- Receiving and administering cooperative agreement funds and monitoring and accounting for all expenditures to USAID;
- Developing sub-agreements with participating institutions for approved projects;
- Implementing research programs in coordination with lead institution and HC institutions;
- Accounting to USAID for program accomplishments and expenditures, through annual reports;
- Obtaining the necessary USAID clearances for international travel by IPM IL personnel and the required approvals for equipment purchases;

- Developing and implementing review and evaluation procedures to assure the IPM IL's overall performance meets stated objectives;
- Coordinating and facilitating meetings of the TAC and PCC;
- Providing leadership in the enhancement of leveraging financial resources other than the core grant;
- Designating appropriate institutions for implementation of Associate Awards;
- Representing the IL on the IL Council;
- Issuing RFAs for competitive subawards; and
- Facilitating TraiNet.

Staff

The IPM IL ME will be fully staffed and supported with experienced and dedicated scientists and managerial professionals.

Key Personnel

Director – Dr. Rangaswamy Muniappan (Muni)

Dr. Muniappan is the Principal Investigator of the IPM Innovation Lab, for which he currently serves as Director. The Director shall have the same authority and responsibilities typically ascribed to other IL Directors. This individual will represent the ME in all forums and will be a member of the IL Council. He will be the primary contact person for the AOR and will manage the project on a day-to-day basis.

Responsibilities:

- manage technical, administrative, and budgetary matters regarding the IL;
- coordinate the efforts of the core management team;
- lead and coordinate preparation of the annual workplan and budget;
- report program accomplishments and expenditures to USAID through annual reports and other required reports;
- represent the ME in IL Council meetings;
- develop and implement monitoring and evaluation procedures to ensure that the overall performance of the IL meets program objectives;
- monitor programs and use of funds by participating institutions that are assigned responsibility for the same through subawards;
- liaise with consortium partners and external IPM IL collaborators;
- facilitate equipment purchase approval through the AOR and the USAID Contracts Office;
- provide leadership in seeking and negotiating supplemental financial resources, such as USAID Mission “buy-ins” through Associate Awards;
- coordinate rapid deployment of technical assistance at the request of USAID missions;
- participate in PCC and TAC meetings (non-voting);
- implement TAC policies and recommendations;
- represent the IPM IL to USAID/Washington and internationally; and

- lead and coordinate the publication of newsletters, annual reports, workshop proceedings, etc.

Africa Program Manager – Dr. Amer Fayad

The Africa Program Manager will have responsibility for the management, implementation, and coordination of all activities in Africa. The Africa Program Manager will report directly to the Innovation Lab Director. The Africa Program Manager will be responsible for activity coordination and knowledge exchange between the Africa focal country programs and the thematic areas of inquiry. The Manager will also ensure a high level of control over research quality and relationship-building with USAID Africa Mission staff. This position is envisioned as a minimum 50% FTE position.

Asia Program Manager – Dr. Elvis (Short) Heinrichs

The Asia Program Manager will have responsibility for the management, implementation, and coordination of all activities in Asia. The Asia Program Manager will report directly to the Innovation Lab Director. The Asia Program Manager will be responsible for activity coordination and knowledge exchange between the Cambodia Rice Project, the Asia focal country programs, and the thematic areas of inquiry. The Manager will also ensure a high level of control over research quality and relationship building with USAID Asia Mission staff. This position is envisioned as a minimum 50% FTE position.

Associate Director – Dr. Amer Fayad

The Associate Director shall provide back-up and assistance to the Director in the fulfillment of all ME responsibilities including but not limited to those listed below.

Responsibilities:

- coordinate implementation of research programs with lead institutions U.S., host country, and IARC institutions;
- coordinate degree and non-degree training programs in the U.S. and other sites;
- prepare IPM fact sheets and technical bulletins;
- manage the monitoring and evaluation (M&E) and indicators;
- maintain records on all training, workshops, IL publications and “buy-ins”;
- contribute updates to the IPM IL website;
- represent the Director at IL Council and other meetings whenever necessary;
- edit the scientific content of the annual report;
- represent the Director as needed and appropriate.

Gender Equity Coordinator – Mr. Daniel Sumner

The Gender Equity Coordinator shall work across all program sites to ensure that gender equity is an integral part, not only of the planning of the IPM IL, but also of its implementation and impact. He will provide input on the gender implications of all IPM IL interventions. He will be an integral part of the ME and participate in all planning processes, including voting at the TAC meetings. The Gender Equity Coordinator will also ensure that gender considerations are properly integrated into research and training

activities, and that a high level of gender scholarship is maintained regarding IPM development and technology transfer.

Responsibilities:

- ensure that gender equity is an integral planning, implementation and impact component of all IPM projects;
- provide input on gender implications of all IPM IL interventions;
- participate in all ME planning processes and activities;
- participate as a voting member of the TAC; and
- ensure that gender considerations are properly integrated into all research and training activities, and that a high level of gender scholarship is maintained in IPM development and technology transfer.

Communications Coordinator – Ms. Stephanie Parker

The Communications Coordinator shall be responsible for implementing the communications strategy. Target audiences of this strategy will be the USAID, the scientific community, the international community, and the general public.

Responsibilities:

- facilitate the development and maintenance of electronic communication linkages to all IPM IL institutions;
- maintain the IPM IL web site;
- produce and edit the annual report and other publications;
- produce and edit brochures, newsletters, news releases, etc.; and
- prepare minutes of the PCC and TAC meetings

Financial Coordinator – Ms. Zara Shortt

The Financial Coordinator shall assist the ME in all aspects of program support for smooth operations of the IPM IL Project.

Responsibilities:

- process invoices for subgrantees;
- process budget and budgetary amendments
- process participant activities in TraiNet;
- assist in the revision of budgets and pre-approval documents for subgrants;
- produce IPM IL financial reports for USAID; and
- process international travel requests.

Technical Advisory Committee

Meetings

Substantial workplan reviews and site visits will typically be done independently by TAC members. The TAC may be convened at the request of the ME or TAC chair to meet in person or electronically, as deemed necessary to fulfill its responsibilities.

Fees and Compensation

Members of the TAC will be reimbursed for expenses incurred as a result of their participation in reviews or meetings.

Extent of TAC Authority

The IPM IL should make full use of the TAC and its recommendations. The ME will respond in writing to TAC reports clarifying acceptance or rejection of each recommendation and report. The TAC recommendations may serve as the basis for bringing about salutary changes in the projects. In the event the ME disagrees with the TAC's recommendations, the rationale for such disagreement shall be recorded by the ME and forwarded to USAID. The TAC reports are submitted to USAID through the ME. The ME also submits to USAID a written response to each TAC recommendation within 30 days of receiving the report.

Conflict of Interest Policy

The Conflict of Interest policy is designed to prevent apparent and actual conflicts of interest. Members of the TAC shall not be affiliated with current IPM IL partner institutions. Members of the TAC shall not participate in evaluating (scoring and voting) an application if:

- they are a PI or collaborator on an application,
- their institution has a stake in the application (lead or subaward),
- they were the major professors of an applicant PI, or
- they feel they cannot objectively evaluate the application for any other reason.

Members of the TAC with clear or potential conflicts of interest shall notify the IPM IL Director immediately so that these conflicts can be avoided through reassignment of reviews or replacement of TAC members.

Principal Investigators

Principal Investigators (PI) have responsibility for implementing a particular competitive program. Their responsibilities include establishment of contractual relationships with partner institutions, workplan development reporting, and self-evaluation of program performance. Each PI is a member of the PCC and has a responsibility to participate in PCC deliberations.

Host Country Coordinators

Host Country Coordinators are host country research partners or employees of regional partner institutions who have been assigned high-level coordination responsibilities for a competitive project or an associate award.

OPERATING PROCEDURES

Environmental Compliance

The IPM IL must comply with Section 117 of the Foreign Assistance Act of 1961, as amended, which requires that the impact of USAID’s activities on the environment be considered and that USAID include environmental sustainability as a central consideration in designing and carrying out its programs. This mandate is codified in 22 CFR 216 and in USAID’s Automated Directives System (ADS) Chapters 201 and 204, which, in part, require that the potential environmental impacts of USAID-financed activities are identified prior to a final decision to proceed, and that appropriate environmental standards are adopted for all activities. (Link to 22 CFR 216 https://www.usaid.gov/our_work/environment/compliance/22cfr216#216.3)

Any IPM IL program using “pesticides” in a very broad sense of the word (including biopesticides and pheromones) must submit an Initial Environmental Examination (IEE) before work with pesticides can begin. The IEE must provide the required information as stated in section 216.3(b) “Pesticide Procedures.” Examples of completed reports are available from the ME upon request.

Requesting Use of Plant Protection Products in the Course of IPM IL Programs

For every synthetic pesticide, botanical pesticide, microbial biopesticide, or pheromone used as a plant protection product in the course of research or extension activities, the IPM IL must obtain authorization from a USAID environment officer. This requirement applies to all USAID projects (Title 22, Code of Federal Regulations, Part 216). The report that must be submitted to request authorization is called an Initial Environmental Examination (IEE). When pesticides (in the broad sense above) are being proposed for use, the report must respond to specific questions by which the IEE takes the form of a Pesticide Evaluation Review and Safe Use Action Plan (PERSUAP).

Activities involving importation or release of non-native biocontrol agents (classical biocontrol) must also be approved through the IEE process.

In addition to its original role in requesting authorization for the IPM IL to use pesticides, the PERSUAPs prepared for IPM IL programs are expected to be read and used by program personnel. The report contains important information on pesticide characteristics, human and environmental risks, and means to reduce those risks. The reports also outline the obligations programs have to ensure that pesticide workers associated with the project (be they researchers or farmers) possess the necessary knowledge and skills to use pesticides safely for on-station or on-farm research. Ensuring that proper personal protection equipment is available is always an obligation when working with toxic substances.

The following policy has been established to ensure that each IPM IL program satisfies the requirements for a PERSUAP if required.

No pesticides can be used until a PERSUAP is submitted to USAID and approved.

For simplicity, all plant protection products will henceforth be referred to as “pesticides.”

Procedures for Enacting Organizational Changes

Changing priorities may require changes in the research program, such as adding or deleting a research activity or institution, changing host countries or geographic regions, or changing program objectives. The IPM IL will use its normal planning and review process in accordance with the IL Guidelines to make such changes, including input from the TAC, PCC, ME and the USAID AOR.

These Policies and Operating Procedures have been developed to help the IPM IL operate in a transparent, consistent, and efficient manner. They may be changed at any time by the IPM IL and subject to approval by the TAC and the ME. The POPs Manual will be updated as needed to reflect these changes.

Procedure to Initiate New Competitive Programs

New research programs may be created on an as-needed basis through guidance from the advisory bodies. To initiate a new activity, the ME will prepare a Request for Applications (RFA). Requests for Applications will be disseminated to all U.S. institutions through the Association of Public and Land-grant Universities (APLU) and the community of science, posted on the IPM IL website, and e-mailed to IPM-related listservs. When proposals are received by the ME, they will be forwarded to the TAC for evaluation and ranking. The ME, after recommendations from TAC are received, selects applications for funding.

Change in Research Activities

Approval from the ME, TAC, and AOR are required whenever a principal investigator proposes a major change in the approved project objectives, research plan or budget. Reasons for this action may include:

- changes in country, regional, or global priorities;
- completion of program objectives;
- performance of the program below an acceptable standard; and
- decreased USAID support for the IL which requires elimination or significant reductions in research activities.

Change in Principal investigators

When a principal investigator terminates his/her role with the IPM IL, the ME should be notified in advance whenever possible. By the next annual meeting of the TAC the

representative from the lead institution is expected to notify the ME of (a) its interest in continuing its involvement in the IPM IL and (b) its proposal for designating a new principal investigator. An interim principal investigator will be identified by the ME to continue the project until a replacement is identified.

The TAC reviews this information and works with the ME and AOR to determine if the project should continue. If not, the ME may initiate procedures to identify a suitable replacement principal investigator, and possibly a replacement lead institution.

Change in Participating Institutions

A participating U.S. or host country institution may be replaced or placed on inactive status because:

- the component has achieved the research and training goals of the approved entire program workplan for which it was responsible;
- the institution no longer has the staff and resources to maintain its participation;
- the performance of the institution has fallen below an acceptable standard; or
- decreased USAID support for the IPM IL requires elimination or reduction of program components (programs, activities, and/or institutions).

The process of replacing a lead or participating institution involves the ME, TAC, and AOR acting in accordance with the established procedures. The ME will work with an institutional representative from the affected institution to bring about the appropriate action. The ME will work with the USAID/Washington AOR throughout the process.

Changes in any subaward administered by VT: PIs should send in writing prior to the actual change with reasons for the change provided. The ME then approves or disapproves the change. If approved, contact information should be sent for VT to prepare an amendment to the subaward agreement.

Carryover Funds Policy

When un-invoiced program funds from the prior year's budgets exceed 10 percent of the year's allocation, the excess may be de-obligated from the current year's program budget and re-allocated to other programs as determined by the ME.

Fund Terminology

Core Funds:	Core funds are funds coming directly to the IPM IL from USAID Washington.
Associate Award Funds:	Associate award funds are funds directed from USAID missions, bureaus, or offices to the ME for associate award implementation.

Buy-In Funds:	Buy-In funds are funds coming directly to IPM IL from USAID as an added amount on top of the earmarked award total.
Carryover Funds:	Carry-over funds are those funds allocated for which no invoices have been submitted to the ME; they may or may not be carried forward to the next budget year, depending on the amount and circumstances.
Pipeline:	Difference between the cumulative amount funded and the cumulative invoiced amount.

Budget Preparation Considerations

- **Cost Sharing** - If required, U.S. and international institutions providing a cost share/matching commitment must report to the ME on the provided invoice template. If total cost share is less than the required amount identified in the subaward document, sponsor funding may be reduced by the amount short.
- **Indirect Costs** - Indirect, or Facilities and Administrative (F&A), costs can be claimed by US institutions, IARCs, and NGOs, provided they have a Negotiated Indirect Cost Rate Agreement (NICRA) or another form of indirect agreement that USAID accepts in lieu of the NICRA. The Management Entity of IPM IL expects that due to the nature of this research effort, the use of the off-campus research rate should apply. All indirect charges should be applied in accordance with the respective rate agreement.

In the absence of a negotiated rate agreement, any non-federal entity may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC). No justification, documentation, or analysis of actual costs is required of the entity to use this rate.

If an approved federally negotiated indirect cost rate OR the 10% de minimis is being applied, no clerical or administrative costs may be budgeted as direct costs without specific prior written approval of the ME and Virginia Tech Office of Sponsored Programs.

- **Subawards**
Other lead institutions administering subawards should apply these same indirect policies.

Budget Terminology

- **Salaries and Wages** – includes faculty, graduate assistantships, hourly labor wages. Note: clerical and administrative salaries must have special prior approval.
- **Fringe Benefits** – includes fringes on faculty, graduate and wage positions. Must have a fringe rate agreement to bill fringe expenses.
- **Travel** – divided into International and Domestic. Includes airfare, ground transportation, per diem, visas, vaccinations, travel insurance, etc. All international travel must be pre-approved and must have a travel approval number (see information later in this document on International Travel).
- **Equipment** – More information regarding equipment purchases found later in this document.
- **Supplies** – program specific; can include entomology or plant pathology supplies, field supplies, etc.
- **Contractual Services** – generally used for such items as telephone, fax, mail, courier services, internet service, and printing. This could also be used for other individuals or companies “outside” of the institution employees who are providing a service.
- **Subcontracts** – if administering subcontracts with other entities. Must have specific prior approval.
- **Tuition** – subawardees must be able to provide upon request valid receipt from the university bursar office or the like.
- **Other Direct Costs** – should only be used for those costs that do not fit into any of the other categories of the invoice. These items would have also been budgeted in this category as well.
- **Indirect Costs** - Indirect, or Facilities and Administrative (F&A), costs can be claimed by US institutions, IARCs, and NGOs, provided they have a Negotiated Indirect Cost Rate Agreement (NICRA) or another form of agreement that USAID accepts in lieu of the NICRA. All indirect charges should be applied in accordance with the respective rate agreement. If the 10% de minimis rate is approved it is billed on a MTDC basis – removing equipment and tuition.

Cash Advances

The IPM IL award from USAID operates on a cost-reimbursement agreement basis, which means allowable and reasonable costs incurred by the prime awardee (Virginia Tech) in the performance of the subaward agreement are reimbursed after the expenditure is incurred and is in accordance with the terms of the contract. In the same manner, Virginia Tech subawardees should operate on a cost reimbursable basis. Invoices shall be submitted by the institution, reviewed by both the Principal investigator and the Management Entity Financial Coordinator, and then, upon approval, submitted for reimbursement.

However, recipient institutions with cash flow issues may need a working capital advance when they first start a project to help with the “start-up” costs due to lack of funds within an institution. Under these circumstances, a subawardee can be allowed an initial working capital cash advance based on a 30-day estimated disbursement need.

Cash may be provided for what is needed for a normal disbursement cycle (usually 30 days) and thereafter invoices for actual costs are submitted and reimbursed to keep working capital on hand to make necessary project payments. Recipients must submit a 30-day spending plan in order to receive any working capital advance. The suggested form can be found on the IPM IL website at this link [Advance Form](#) or requested from the Financial Coordinator.

Recipients must invoice monthly using this method in order to ensure adequate cash flow and to avoid exchange rate issues because no adjustment in cost is made due to exchange rate fluctuations.

All cash advances must be invoiced and reconciled prior to closing out any subawardees' accounts.

Invoicing

Subawardees shall submit invoices for approval and payment at least quarterly but no more frequently than monthly to the ME. In order to be eligible for reimbursement, invoices shall be for allowable, approved costs incurred in accordance with the terms of their subawards and shall display expenses for reimbursement in accordance with the approved budget and following the format provided by the ME. If budgeted, cost sharing must be reported for each invoice submitted.

Invoicing on a regular basis helps the ME to prepare the appropriate reports to USAID and shows continual spend down of USAID funds. Long periods without invoices could indicate to USAID that funds are not needed as requested in budgets, which could cause USAID to reduce funding in subsequent years. In addition, infrequent or non-existent invoices will prevent allocations in future years from the ME to the

subawards. Prolonged non-invoicing may lead to having a subawardee's intended funding be redirected to another purpose.

There is an IPM IL invoice template that must be used dependent on the subawardee's designation as a Non-Host country subaward, Host country subaward, or Public International Organization (PIO) subaward. Please contact the IPM IL financial coordinator for the appropriate template.

All final invoices submitted under IPM IL activities, must be received by Virginia Tech no later than 30 days after the subaward end date of the subaward. An authorized representative of the subawardee shall certify on each invoice that the costs are allowable and allocable, and are actual costs as recorded in the subawardee's records and as expended for the work actually performed in accordance with the terms of the subaward. Failure to follow these instructions may result in non-payment.

Reporting Host Country Taxes

All subawardees are required to report applicable Host Country Taxes to the Management Entity. Within the IPM IL invoice template there is a form to record any value added taxes (VAT) or customs duties assessed by host country governments. For any transaction purchasing commodities of \$500 or more, the total amount of VAT and/or custom duties must be entered. The cumulative amount to date should be recorded in the designated box. This is a USAID reporting requirement.

USAID Standard provisions state that host government taxes are not allowable where the authoritative approval provides the necessary means to the Subrecipient to obtain an exemption or refund of such taxes, and the Subrecipient fails to take reasonable steps to obtain such exemption or refund. Otherwise, taxes are allowable in accordance with the Standard Provision, "Allowable Costs," and must be reported as required in this provision

USAID Eligibility Rules for Goods and Services

In accordance with USAID Standard Provision for Non-U.S. Nongovernmental Organizations M6, the following are considered Ineligible and Restricted Commodities and Services by USAID:

- 1) Ineligible Commodities and Services. The recipient must not, under any circumstances, procure any of the following under this award:
 - (i) Military equipment,
 - (ii) Surveillance equipment,
 - (iii) Commodities and services for support of police or other law enforcement activities,

- (iv) Abortion equipment and services,
- (v) Luxury goods and gambling equipment, or
- (vi) Weather modification equipment.

2) **Ineligible Suppliers.** Any firms or individuals that do not comply with the requirements in Standard Provision, “Debarment, Suspension and Other Responsibility Matters” and Standard Provision, “Preventing Terrorist Financing” must not be used to provide any commodities or services funded under this award.

3) **Restricted Commodities.** The recipient must obtain prior written approval of the Agreement Officer (AO) or comply with required procedures under an applicable waiver, as provided by the AO when procuring any of the following commodities:

- (i) Agricultural commodities,
- (ii) Motor vehicles,
- (iii) Pharmaceuticals,
- (iv) Pesticides,
- (v) Used equipment,
- (vi) U.S. Government-owned excess property, or
- (vii) Fertilizer (purchased outside host country)

Before any purchases of the above restricted commodities consult the IPM IL Management Entity to ensure proper approvals are in place.

IPM Innovation Lab Portal

The IPM IL Portal is an online management and reporting system for the program. Subawardees will utilize this system for international travel requests, trip reports, workplan submissions, and other various reporting items.

All principal investigators are required to register for an account under their designated project in the IPM Portal. Other internal and external collaborators may also request accounts on an as needed basis. All user requests will be reviewed by the Management Entity for approval. An instruction manual for the portal may be requested from the ME.

Coordination and Clearance of International Travel

Travel Request

Prior to the beginning of each program year, a list of planned INTERNATIONAL trips and destinations must be submitted to the Management Entity by the Principal investigators through the IPM Portal. This list should encompass all planned destinations for all subawardees/collaborators on the program. International travel is

any travel outside the borders of the scientist's home country (meaning that travel within a region, such as West Africa, would be considered international if the scientist is from Mali and is planning to go to Senegal or Guinea.) This list must be approved by the ME and USAID. Justifications may be required by the ME at any time for any travel, either prior to submission to USAID, or after review by USAID.

Before departure for an international trip (at least 30 days), all collaborators must submit a Travel Request through the IPM Portal to the Management Entity. This request details the dates, the destination, and the purpose(s) of the trip, along with contact information in country. The ME reviews information, validates the purpose, and will approve through the portal. Automated notifications will be emailed once the request is approved or if additional information is required. If approved by the IPM IL Program Director (or delegated representative), a unique identifier will be assigned automatically to the travel request. Any invoices submitted by the traveler's institution which claim expenditures related to this trip, must have the travel detail information completed, along with the assigned travel request identifier. If a trip has NOT been pre-approved in this manner, or is not reported correctly on the invoice, the traveler may be denied reimbursement.

Each trip request should have a narrative that describes the purpose of the travel and expected outcomes, should include contact (by advance arrangement) with the relevant USAID Mission, preferably through the USAID AOR, and should be followed by an informative trip report describing discussions, decisions, accomplishments and the reasons for not achieving any of the expected purposes of the trip.

These International Travel Authorization Numbers should be submitted by subawardees with the documentation accompanying invoices for the associated travel. International travel will not be reimbursed without these authorization numbers. The IPM IL invoice form contains a worksheet for travel information.

Please reference the IPM IL Portal manual for step by step instructions on how to submit a trip request.

Fly America Act

Anyone whose air travel is financed by US government funds must use United States flag air carriers whenever possible. In addition to US airlines (such as American, United, Delta, etc.), US flag air carrier service also includes service provided under a code share agreement with a foreign air carrier in accordance with Title 14, Code of Federal Regulations when the ticket, or documentation for an electronic ticket, identifies the US flag air carrier's designator code and flight number.

Travelers are required by the "Fly America Act" to use US flag air carrier service for all air travel funded by the US government, unless one of the exceptions are met. The list of exceptions can be found on the website listed below. Foreign air carrier service may NOT be used solely based on a cost difference. All travel where a US airline or code

share is not used must be fully documented as to the reasons.

Detailed information on this requirement may be found at the following URL:

<http://www.gsa.gov/portal/ext/public/site/FTR/file/Chapter301p010.html/category/21868/>

Per Diem for International Travel

Maximum per diem for international travel on USAID projects is determined by the U.S. Department of State. Per diem is divided in to two categories:

- Lodging, which is reimbursable for exact costs up to a specified maximum (must have hotel receipt(s)).
- Meals and Incidental Expenses (M&IE), which is at a fixed rate payable to the traveler to cover meals and most miscellaneous costs. This should be paid accordingly for actual location traveled to.

The lodging and M&IE rates vary among countries, among places within countries, and over time. For up-to-date information on international per diem rates, use the following link: https://aoprals.state.gov/web920/per_diem.asp

Transportation for business (not travel to restaurants or the like) is reimbursable separately from per diem.

International Travel – Exchange Visitors and TraiNet

All exchange visitors traveling to the United States for any training program, including long term (Graduate students) and short term programs, must be approved by the IPM IL Management Entity. Additionally, a travel request must be submitted through the IPM IL Portal for approval at least 30 days prior to their departure to the U.S. The ME will assist on an as needed basis for processing participants through the USAID TraiNet visa system.

TraiNet/Visa Compliance System (TraiNet/VCS) is a system for recording and reporting training efforts by USAID, as well as for managing the visa process for project participants coming to the U.S. on USAID funds. All trainees who travel from their home country to any other country for training or educational purposes, must be entered. For assistance in making the determination on whether a J-1 visa is needed or not, contact the IPM IL Management Entity. If needed, the ME will seek guidance from the USAID AOR.

TraiNet/VCS is used to obtain form DS 2019, and then subsequently J-1 visas for international travelers coming to the United States. This system is also used to record project-related travel between countries outside the United States. This system is web based and interacts with USAID missions and the Student and Exchange Visitor Information System (SEVIS) in Washington, DC.

If someone has traveled on non-USAID funds to the U.S. (e.g. an international

graduate student with non-IPM IL funding) and then is switched to IPM IL funds, the student must be entered in TraiNet and his/her visa must be changed to a J-1 under this system.

As part of the “training” process, health and accident coverage (HAC) insurance must be purchased for all international travelers to the U.S. USAID has specific guidelines outlining what must be covered by the purchased HAC.

Procedures for Equipment Purchase

In accordance with 2 CFR §200.33, “equipment” is defined as *“tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the non-Federal entity for financial statement purposes, or \$5,000.”* Any Program equipment purchased which meets the USAID definition or the respective institution’s definition must be recorded as equipment on the invoice and must have been pre-approved by being included in the workplan reviewed and approved by USAID prior to the beginning of the workplan year. Equipment purchases not pre-approved will not be reimbursed.

For budgeting purposes, many institutions have their own definitions of “equipment.” At Virginia Tech, for example, any item that costs \$2000 and has a useful life of at least three years is categorized as equipment. Items outside this definition are considered supplies. Lead institutions should follow their guidelines. Overhead should not be charged for equipment. Overhead is charged for supplies. Therefore, the distinction between supplies and equipment is important when developing budgets.

Equipment Labeling and Inventory

All equipment purchased with USAID IPM IL funds and used in host countries must be labeled and branded in accordance with USAID branding guidelines. See: <http://www.usaid.gov/branding/>.

An inventory of equipment must be kept at the acquiring institution. Inventory information is required to be submitted with the invoice. There is an equipment inventory worksheet within the IPM IL invoice spreadsheet.

Authorization for Purchasing Equipment

To purchase equipment meeting the following requirements on IL project funds in compliance with the Office of Management and Budget’s Circular A-21, the ME must obtain prior USAID AOR approval. Under normal circumstances, this approval should be acquired through the annual work plan and budget approval process.

1. Purchase of *Special Purpose Equipment*, which is defined as an article of nonexpendable tangible personal property, which is used only for research,

medical, scientific, or other technical activities, and which has a useful life of more than two years and an acquisition cost of **\$5,000 or more** per unit.

2. Purchase of *General Purpose Equipment*, which is defined as an article of nonexpendable tangible personal property, the use of which is not limited only to research, medical, scientific, or other activities (e.g., office equipment and furnishings, air conditioning equipment, reproduction and other equipment, motor vehicles, and automatic data processing equipment), having a useful life of more than two years and an acquisition cost of **\$5,000 or more** per unit.

Begin the authorization request by contacting the IPM IL Financial coordinator with the following required information:

- a. Reason the item is needed—relating to stated project objectives
- b. Ownership and responsibility for maintenance, liability and operation costs— whether U.S. or HC, IL or collaborating institution expenses
- c. Availability of budgeted funds for purchase, shipping, etc.

If the program director confirms that the item requested supports research on the identified project objectives, and has been budgeted, then USAID approval for purchase will be requested by the ME.

The ME will not process equipment purchase authorization requests for items already purchased. Without USAID approval for purchase, equipment costs will be disallowed. These costs will then be borne by the lead institution or the entity responsible for authorizing the purchase.

IPM IL Communications

Through research reports, scholarly publications, IPM “Success Stories,” and the IPM IL web site, the IPM IL seeks to spread the word about the benefits of integrated pest management. IPM IL communications include, but are not limited to, the instruments described below.

Following guidelines about the specific instruments, we present additional considerations: USAID branding requirements, and 508 compliance (see below) for web sites.

Research Reports and Scholarly Publications

Data collected using IPM IL funds is considered to be in the public domain and must be released to the public within a reasonable period of time. IPM IL partners may hold data for up to two years before release to facilitate publications and scholarly activities, but ultimately all IPM IL-generated data must be made available to the public with proper documentation (meta-data) so that it can be used by others. Release of data may take one of several forms, all described below. Before data is released, full sharing of all data collected is expected among collaborating individuals and

institutions. Data may be released through the IPM website, publication in professional journals, or IPM IL technical and annual reports, and ultimately as the raw data with appropriate meta data and processing to correct errors, protect respondent confidentiality, and facilitate use by other researchers and development specialists. All publications resulting from IPM IL support are expected to show joint authorship of U.S. and host country scientists.

Publication in professional journals is strongly encouraged and is used as an indication of the quality of the research conducted. Publication in journals that allow free web-based access by developing country scientists and professionals is preferred. Thousands of journals now exist in this category. One list of such journals is available at <http://www.aginternetwork.org/en/journals.php>. The order in which authors are listed will be decided among the involved researchers on a case-by-case basis. However, host country collaborating scientists who have made significant contributions to the reported research must be included as authors or co-authors of the papers generated from the site research. All collaborators are expected to be involved with data collection, analysis, and preparation of a given paper. Acknowledgment of the IPM IL and USAID is required in all publications under “Public Attribution of USAID Support” as specified later in this section.

Project Reporting Requirements

The IPM IL will integrate the planning, reporting, and synthesizing of research results across activities to provide a firm and transparent basis for strategically targeting the geographic allocation of resources and effectively monitoring and evaluating research progress and impacts of program activities. We will combine monitoring and evaluation (M&E) with performance assessment by designing annual work-plan activities around key FtF indicators (Table 1) and tracking and supplementing them with a set of custom impact indicators based on the priorities of stakeholders in the targeted regions.

M&E will involve all PIs, regional partners, and coordinators. Regional coordinators and PIs will collect (quarterly and annually, as appropriate) sex-disaggregated data for FtF indicators (Table 1) and others within their programmatic responsibility zones. Additional indicators will utilize the Women’s Empowerment in Agriculture Index (WEAI) to evaluate women’s roles and engagement in decision-making about agricultural production, access to and power over productive resources, control over and use of income, leadership in the community, and time use. Where possible, these data will be geo-referenced to help in analyzing the numbers of farmers, organizations, agribusinesses and others involved in research and outreach activities and numbers of technologies at various stages of development. To address the quality of that impact, performance will also be monitored and assessed on the extent to which research responds to specific IPM-related problems identified by stakeholders during regional planning meetings. Sex disaggregation is required for all applicable indicators. These sex-disaggregated and geo-referenced indicators will provide benchmarks and milestones that are meaningful in the research context and useful for decision-making. They will allow for visualization of FTFMS data and contribute location information to multi-donor

efforts to map development activities and results.

Table 1. Key Feed the Future Indicators for the IPM IL

SPS I.D.	Indicator (Source: FY17 FTFMS Guidance)
EG. 3-1	Number of rural households benefiting directly from USG interventions (RAA)
EG. 3.2-1	Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training (RAA) (WOG)
EG. 3.2-2	Number of individuals who have received USG supported degree-granting agricultural sector productivity or food security training (RAA)
EG. 3.2-4	Number of for-profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations, and community based organizations (CBOs) receiving USG food security related organizational development assistance (RAA) (WOG)
EG. 3.2-7	Number of technologies or management practices under research, under field testing, or made available for transfer as a result of USG assistance (RAA) <ul style="list-style-type: none"> • Phase I: number of new technologies or management practices under research as a result of USG assistance • Phase II: number of new technologies or management practices under field testing as a result of USG assistance • Phase III: number of new technologies or management practices made available for transfer as a result of USG assistance
EG. 3.2-17	Number of farmers and others who have applied improved technologies or management practices with USG assistance (RAA) (WOG)
EG. 3.2-18	Number of hectares of land under improved technologies or management practices with USG assistance (RAA) (WOG)
EG. 3.2-20	Number of for-profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based organizations (CBOs) that applied improved organization-level technologies or management practices with USG assistance (RAA) (WOG)

Host country coordinators will be responsible for collecting indicator data (Table 2). Project PIs will be required to review and submit indicator data to regional coordinators who will provide indicator narratives with the data to the associate director in order to help interpret FTFMS data and prepare for the FTF portfolio reviews. Lead PIs and regional coordinators will provide deviation narratives for those indicators showing +/- 10% change from projected targets (or as required by USAID). Data quality assessment will be conducted during routine visits of the regional coordinator and periodic visits of the IPM IL director and/or associate director. Where possible, data will be collected using mobile technologies. Once collected, indicator data will be stored in the IPM IL database and analyzed for quarterly and annual reports. Data analysis will involve geospatial tools that document progress at project activity locations in order to strategically target effective USAID investments.

Table 2. Calendar for FtF Indicators

Activity	Output	Responsible Party	Date
Establish FtF indicator baseline	FtF Indicator table with baseline	PIs and regional coordinators	September 1, 2015
Establish indicator targets for year 1	FtF Indicator table with target indicators	PIs and regional coordinators	September 1, 2015
Consolidate data collection and	Host-country/project tabular	Host country	October 15

deliver to lead PIs	report with geo-referencing	coordinators	
Review host country/ project data and deliver to regional coordinators	Regional tabular report with geo-referencing	Lead PIs	November 1
Collation, verification, and analysis of indicators	Tabular presentation with accompanying notes	Regional Coordinators	November 8
Verification, analysis and delivery of IPM IL indicator report to USAID AOR and FTFMS online submission system	Tabular presentation with indicator narrative report, deviation narratives	Associate Director	November 15

Impact Assessment

Reporting

Reports will be delivered in a timely fashion to feed into the USAID reporting calendar. Annual data on FtF indicators will correspond to activities conducted between July 1 and June 30. While data collection and analysis for FtF reporting is relatively straightforward, data collection to monitor the performance of the specific research programs to improve IPM adoption requires local adaptation. Performance assessments will be conducted annually to assure progress toward the attainment of benchmarks and milestones. Inclusion of all major stakeholders at the outset helps to ensure buy-in for positive outcomes and broad-based support for the changes that need to be made. Routine performance monitoring allows for project partners to be sure they are on target. Semi-annual reports covering the period from Oct 1 – Mar 31 and April 1 – Sept 30 will be submitted no later than 30 days after the end of the reporting period. Annual work-plans for year 2 – 5, Oct 1 – Sept 30, will be submitted with a travel matrix to USAID AOR on July 31.

Trip Reports

Within 30 days following the completion of each international trip, the traveler must submit a trip report to the ME summarizing the accomplishments of the trip. If several individuals are traveling together, a single report representing the group will suffice. The report shall include the objectives of the trip (as described in the International Travel Request), participants, activities, technical observations, progress in meeting the objectives of the trip, suggestions, and recommendations for follow-up as appropriate. A list of contacts and each person's title and affiliation should be included. After review by the ME, these reports will be posted by the ME on the IPM IL web site.

APPENDICES

Appendix 1. Collaborators by Project (as of September 2016)

Strengthening production and export of Vietnamese fruit crops through innovative and market-orientated IPM		
Principal Investigator	Title	Organization
Nguyen Van Hoa	Plant Pathologist	Southern Horticultural Research Institute (SOFRI), Vietnam
Collaborators	Title	Organization
Dang Thi Kim Uyen	Plant Pathologist	Southern Horticultural Research Institute (SOFRI), Vietnam
Dang Thuy Lin	Deputy Head	Science and International Cooperation Department, (SOFRI)
Hunynh Thanh Loc	Researcher	Southern Horticultural Research Institute (SOFRI), Vietnam
Le Cao Luong	Lecturer and Researcher	Plant Protection Department, Nong Lam University (NLU), Vietnam
Le Dinh Don	Lecturer of Agronomy	Nong Lam University (NLU), Vietnam
Le Quoc Dien	Entomologist	Southern Horticultural Research Institute (SOFRI), Vietnam
Le Xuan Vi	Entomologist	Plant Protection Research Institute (PPRI), Vietnam
Mai Van Tri	Tropical Fruit Pest Specialist	Southern Horticultural Research Institute (SOFRI), Vietnam
Maria Elisa Christie	Director	Women and Gender in International Development, Virginia Tech
Naidu Rayapati	Associate Professor of Plant Pathology, Virologist	Department of Plant Pathology, Washington State University
Ngo Thi Thanh Truc		Can Tho University, Vietnam
Nguyen Duy Hung	Researcher	Fruit and Vegetable Research Institute, Vietnam
Nguyen Thanh Hieu	Plant Pathologist	Southern Horticultural Research Institute (SOFRI), Vietnam
Phan Thi Thu Hien	Pathologist	PQIPS, Vietnam
Quyên Dinh Ha	Lecturer and Researcher,	Vietnam National University of Agriculture

Tran Thi My Hanh	Entomologist	Southern Horticultural Research Institute (SOFRI), Vietnam
Trinh Xuan Hoat	Deputy Director General	Plant Protection Research Institute (PPRI), Vietnam
Truong thi Ngoc Chi	Sociologist	Cuu Long Delta Rice Research Institute, Vietnam

Innovative Scientific Research and Technology Transfer to Develop and Implement Integrated Pest Management Strategies for Vegetable and Mango Pests in Asia

Principal Investigator	Title	Organization
George Norton	Professor of Agricultural Economics	Department of Agriculture and Applied Economics, Virginia Tech
Collaborators	Title	Organization
Cristina Rosa	Assistant Professor of Plant Virology	Penn State University
Edwin G. Rajotte	Professor of Entomology	Penn State University
Luke Colavito	Director	International Development Enterprises (iDE), Nepal
Maria Elisa Christie	Director	Women and Gender in International Development, Virginia Tech
Megan O'Rourke	Assistant Professor	Department of Horticulture, Virginia Tech
Mike Roberts	Director	International Development Enterprises (iDE), Cambodia
Naidu Rayapati	Associate Professor of Plant Pathology, Virologist	Washington State University
Sally A. Miller	Professor	Ohio State University
Yousuf Mian	Coordinator	IPM Innovation Lab, Bangladesh

Participatory Biodiversity and Climate Change Assessment for Integrated Pest Management in the Annapurna-Chitwan Landscape, Nepal

Principal Investigator	Title	Organization
Nir Krakauer	Assistant Professor of Civil Engineering	City University of New York (CUNY) - City College
Collaborators	Title	Organization
Ajay Jha	Director	Institute for Global Agriculture and Technology Transfe
Anjana Devkota		Department of Botany, Tribhuvan University, Nepal
Bharat Babu Shrestha		Department of Botany, Tribhuvan University, Nepal

BR Ranabhat		Ecological Services Centre
David Lohman	Assistant Professor of Biology	City University of New York – City College
José Daniel Anadón	Assistant Professor of Biology	City University of New York – Queens College
Madan Lall Shrestha	Academician	Nepal Academy of Science and Technology
Min Raj Pokhrel	Assistant Professor	Agriculture and Forestry University, Nepal
Mohan Sharma	Professor	Agriculture and Forestry University, Nepal
Mohan Siwakoti		Department of Botany, Tribhuvan University, Nepal
Naba Raj Devkota	Professor	Agriculture and Forestry University, Nepal
Pramod Kumar Jha		Ecology and Resource Management, Tribhuvan University, Nepal
Ram Asheshwar Mandal	Project Coordinator and Post Doc	Tribhuvan University, Nepal
Sanjay Kumar Jha		Department of Botany, Tribhuvan University, Nepal
Sundar Tiwari	Assistant Professor	Agriculture and Forestry University, Nepal
Tarendra Lakhankar	Project Scientist	CUNY Crest Institute

Development of Ecologically based Participatory Integrated Pest Management (IPM) Package for Rice in Cambodia (EPIC)		
Principal Investigator	Title	Organization
Buyung Hadi	Entomologist	International Rice Research Institute (IRRI), Phillipines
Collaborators	Title	Organization
Alexander McNaughton Stuart	Post-Doctoral Fellow	International Rice Research Institute (IRRI), Phillipines
Casiana M. Vera Cruz	Senior Scientist	International Rice Research Institute (IRRI), Phillipines
Chou Cheythyrih		General Directorate of Agriculture, Cambodia
Claudius Bredehöft	National Project Coordinator	ASEAN Sustainable Agrifood Systems, Gesellschaft für Internationale Zusammenarbeit (GIZ), Cambodia
David Edward Johnson	Senior Scientist	International Rice Research Institute (IRRI), Phillipines

Il-Ryong Choi	Plant Virologist	International Rice Research Institute (IRRI), Phillipines
Jean Claire A. Dy	Communications Specialist	International Rice Research Institute (IRRI), Phillipines
Makarady Keam		Research Department Directory, Cambodian Center for Study and Development in Agriculture
Pieter Rutsaert	Agricultural Economist	International Rice Research Institute (IRRI), Phillipines
Ricardo Oliva	Scientist	International Rice Research Institute (IRRI), Phillipines
Sathya Khay		Plant Protection Division, Cambodian Agricultural Research and Development Institute
Virender Kumar	Senior Scientist	International Rice Research Institute (IRRI), Phillipines
W. Harvey Reissig	Professor of Entomology	New York State Agricultural Experiment Station, Cornell University

Invasive Species Modeling for South American Tomato Leafminer and Groundnut Leafminer		
Principal Investigator	Title	Organization
Abhijin Adiga	Senior Research Associate	Biocomplexity Institute, Virginia Tech
Collaborators	Title	Organization
Achla Marathe	Professor	Biocomplexity Institute, Virginia Tech
Anaïs Chailleux	Research Entomologist	French Agricultural Research Centre for International Development, Senegal
Arame Ndiaye	Molecular Biologist	Biopass, Senegal
Madhav Marathe	Professor	Biocomplexity Institute, Virginia Tech
Nicolas Desneux	Research Scientist	French Nation Institute for Agricultural Research
Ousmane Ndoye	Technical Assistant	Fédération des Producteurs maraîchers de la zone des Niayes, Senegal
R. Asokan	Principal Scientist, Agricultural Entomology	Indian Institute of Horticultural Research
R. Venugopalan	Senior Scientist, Agricultural Statistics	Indian Institute of Horticultural Research
Srinivasan Venkatramanan	Postdoctoral Associate	Biocomplexity Institute, Virginia Tech
Thierry Brevault	Research Entomologist	French Agricultural Research Centre for International Development, Senegal

Y.G. Prasad	Principal Scientist of Entomology	Institute for Dryland Agriculture, India
V. Sridar	Entomologist	Indian Institute of Horticultural Research

Biological Control of the Invasive Weed <i>Parthenium hysterophorus</i> in East Africa		
Principal Investigator	Title	Organization
Wondi Mersie	Associate Dean and Director of Research	Virginia State University
Collaborators	Title	Organization
Birru Yitafere Woldetsadik	Director General	Amhara Regional Agricultural Research Institute, Ethiopia
Kassahun Zewdie	Coordinator of Parthenium Weed Management	Ethiopian Institute of Agricultural Research
Lisanework Nigatu Gebreyes	Associate Professor	Haramaya University, Ethiopia
Lorraine Strathie	Researcher	ARC-Plant Protection Research Institute, South Africa
Maria Elisa Christie	Director	Women and Gender in International Development, Virginia Tech
Mulugeta Negeri Tulu	Dean of the College of Agriculture	Ambo University, Ethiopia
Richard Molo	Head, Biological Control Unit	Nation Agricultural Research Organization, Uganda
Samora Macrice	Ecologist	Sokoine University, Tanzania
Samuel Assefa	Project Coordinator	Gesellschaft für Internationale Zusammenarbeit (GIZ), Ethiopia
Sintu (Lydia) Alemayehu	Project Coordinator in Ethiopia	Virginia State University
Tesfay Amare	Weed Scientist	Ambo University, Ethiopia

Rice, Maize and Chickpea IPM for East Africa		
Principal Investigator	Title	Organization
Tadele Tefera	Country Head	International Centre of Insect Physiology and Ecology (<i>icipe</i>), Ethiopia
Collaborators	Title	Organization
Cornelius Fabian	Assistant Director	Plant Health Services, Tanzania
Ferdu Azerefege	Associate Professor	Hawassa University, Ethiopia
Florence Olubayo	Associate Professor	University of Nairobi, Kenya

Henry Wainwright	Joint Managing Director	Real IPM, Kenya
Hugo de Groote	Principal Scientist	International Maize and Wheat Improvement Center, Kenya
Murenga Mwimali	Principal Research Specialist	Kenya Agricultural Livestock Research Organization
Patrick Gicheru	Senior Principal Research Scientist	Kenya Agricultural Livestock Research Organization
Solomon Chanyalaw	Center Director	Ethiopian Institute of Agricultural Research
Stephen Mugo		International Maize and Wheat Improvement Center, Kenya
William Hutchison	Professor and Extension Entomologist	University of Minnesota

Integrated Pest Management for Vegetables in East Africa		
Principal Investigator	Title	Organization
John Cardina	Associate Professor	Ohio State University
Collaborators	Title	Organization
Amon P. Maerere	Professor of Horticulture	Sokoine University of Agriculture, Tanzania
Cathy Rakowski	Associate Professor	Ohio State University
Danny Coyne	Soil Health Scientist	International Institute of Tropical Agriculture (ITTA), Kenya
Ferdu Azerefeagne	Associate Professor	Hawassa University, Ethiopia
George Norton	Professor	Virginia Tech
Henry Wainwright	Joint Managing Director	Real IPM, Kenya
J. Mark Erbaugh	Director of International Programs in Agriculture	Ohio State University
Jessica Mbaka		Kenya Agricultural and Livestock Research Organization
Luis Alberto Cañas Castro	Associate Professor of Entomology	Ohio State University
Matthew Kleinhenz	Professor of Horticulture	Ohio State University
Peter Sseruwagi		Mikocheni Agriculture Research Institute, Tanzania
Robert Gilbertson	Professor of Plant Virology	University of California, Davis
Sally A. Miller	Professor of Plant Pathology	Ohio State University

Appendix 2. IPM IL Contacts (as of September 2016)

IPM IL Management Entity

Rangaswamy (Muni) Muniappan
Program Director, IPM IL
Office of International Research, Education and
Development (OIREED)
Virginia Tech
526 Prices Fork Rd. (0378)
Blacksburg, VA 24061
Phone: 540-231-3516
Fax: 540-231-3519
E-mail: rmuni@vt.edu

Elvis (Short) Heinrichs
Asia Coordinator
Office of International Research, Education and
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Appendix 3. Advisory Groups (effective September 2016)

USAID Washington, Agreement Officer's Representative (AOR):

John Bowman USAID Washington

Technical Advisory Committee (TAC):

Lawrence Datnoff (Chair)	Louisiana State University
Shoki Al- Dobai	Food and Agriculture Organization
Dely Gapasin	World Bank (retired)
Glen Hartman	USDA-ARS
Srinivasan Ramasamy	AVRDC/ World Vegetable Center

Program Coordinating Committee (PCC):

Abhijin Adiga	Virginia Tech
Amer Fayad (Non-voting)	Virginia Tech
Buyung Hadi	International rice Research Institute
Elvis (Short) Heinrichs (Non-voting)	Virginia Tech
George Norton (Chair)	Virginia Tech
John Cardina	The Ohio State University
Nir Krakauer	CUNY
Rangaswamy Muniappan (Non-voting)	Virginia Tech
Tadele Tefera	icipe
Van Hoa	SOFRI
Wondi Mersie	Virginia State University

Appendix 4. Glossary

The IPM IL is administered as a Leader with Associates Award to Virginia Tech, which is the *Management Entity* (ME) that provides principal investigatorship, administers sub-awards to participating institutions, and maintains fiscal responsibility.

The *Director*, as part of the ME, is responsible for program development, coordinating the activities across the program and overseeing daily operations of the IPM IL.

The *Program Coordinating Committee* (PCC) provides technical guidance and advice for the program development.

In the broadest sense, *Research Activities* include the sub-activities of training, research, and technology transfer.

A *Principal investigator* is a PI from the lead institutions who leads a competitively awarded component of the IPM IL.

The *Site Coordinators* are long-term, host country research activity leaders responsible for coordinating the research activity in the host country or region.

Principal Investigators are scientists in charge of research for a defined research activity of a IL.

The Agreement Officer's Representative is a USAID employee designated by the Agreement Officer to oversee a IL on behalf of USAID.

The *Technical Advisory Committee* (TAC) provides unbiased review and prioritization of activity proposals and objective evaluations of the program and its activities suggesting areas for improvement.

A *Subaward* is a document representing a contractual agreement made between Virginia Tech and a participating institution under authority of a cooperative agreement.

A *USAID Mission* is a formally organized USAID unit in a developing country led by a Mission Director, or a Country Representative.

Host Country Expenditures are funds expended exclusively “in”, “for”, or “on behalf of” IPM IL Host Countries, i.e., host country graduate student tuition and stipend, equipment for a host country, salaries for staff and/or labor working in the host country, etc.