Feed the Future Innovation Lab for Integrated Pest Management

Request for Concept Note

Biological control of the invasive weed Parthenium hysterophorus in East Africa

Calendar

Activity	Date
Issuance of request for concept note	December 23, 2014
Deadline for questions	January 9, 2015
Deadline for receipt of concept notes	January 30, 2015
Review and selection of concept notes for promotion to full proposals	Feb. 16, 2015
Requests for full proposals sent	February 24, 2015
Deadline for submission of full proposal	March 24, 2015
Proposal winner announced	May 1, 2015

This request for concept notes is issued by Virginia Tech, the Management Entity of the Feed the Future Innovation Lab for Collaborative Research on Integrated Pest Management (IPM IL). The Virginia Tech IPM IL is funded by the U.S. Agency for International Development under cooperative agreement AID-OOA-L-15-00001. The Virginia Tech IPM IL management entity offices are located at the Office of International Research, Education and Development, Virginia Tech, 526 Prices Fork Road, Blacksburg, VA 24061. For additional information please contact Dr. R. Muniappan, IPM IL Director, 540-231-3516, Email: <rmuni@vt.edu> Website: <http://www.oired.vt.edu/ipmcrsp/>

1. Background

The **Feed the Future (FtF) Innovation Lab for Integrated Pest Management (IPM IL)** is a USAID-funded program that supports Integrated Pest Management research, technology transfer and capacity building in relation to small-holder farming systems. Virginia Tech was awarded a five-year contract on November 25, 2014 to serve as the management entity of the IPM IL. The IPM IL is now inviting the submission of concept notes designed to develop and implement biological control of the invasive weed *Parthenium hysterophorus* in East Africa through a process of technology development, adoption and scaling up combined with human and institutional capacity building activities. Project activities may be proposed for four and one-half years (June 1, 2015 to October 31, November 16, 2019). Following evaluation of the concept notes, full proposals will be requested from a short-list of applicant(s).

Crop losses due to pests (insects, diseases, weeds, nematodes, birds, and rodents) are a major constraint to alleviating poverty and improving nutrition in Asia. Most estimates of production and post-harvest losses due to pests range from 30 to 40 percent. Improper use of pesticides poses a serious threat to health and biodiversity. IPM is a decision support system that uses evidence-based information to reduce losses due to pests, minimize reliance on synthetic pesticides, and foster the long-term sustainability of agricultural systems.

Integrated Pest Management (IPM) is defined as a dynamic, crop, location, and season specific program that combines all available compatible tactics that impart profit, safeguards environmental and human health, encompasses cultural sensitivities, and ensures social acceptance. The previous IPM IL emphasized development of IPM packages for selected crops by addressing problems faced by the farmers from the time of planting the seed to the harvest by developing alternate technologies to use of synthetic chemical pesticides. However, IPM IL does allow use of such pesticides when alternate technologies are not available or are proven to be ineffective.

Applicants are referred to the IPM IL website for additional information about the IPM IL: http://www.oired.vt.edu/ipmcrsp

The IPM IL will be implementing biological control of the invasive weed *Parthenium hysterophorus* (Asteraceae) in East Africa (Ethiopia, Kenya, Tanzania, and Uganda).

2. Overview

The IPM IL invites the submission of a concept note from US universities, CGIAR Institutions, and Host Country Institutions that may lead to an invitation to submit a full proposal to lead the project on biological control of Parthenium. Illustrative East African institutions for possible collaboration are Ethiopian Institute of Agricultural Research (EIAR), Amahara Regional Agricultural Research Institute, Tigray Regional Agricultural Research Institute, and Haramaya University in Ethiopia; Makerere University in Uganda; Institution of National Museum of Kenya and Kenya Agricultural Research Institute in Kenya; and Sokoine University in Tanzania. Collaboration with other institutions like CABI; *icipe*; Agricultural Research Institute of South Africa; and University of Queensland and Department of Agriculture, Fisheries and Forestry, Queensland, Australia are also encouraged.

The project will:

Monitor spread of *Zygogramma bicolorata* that was released at Wollencheti in July 2014 in Ethiopia.

a. Mass culture and release *Z. bicolorata* in additional regions of Ethiopia where Parthenium has stablished, in collaboration with regional and national officials.
b. Evaluate efficacy of *Z. bicolorata* in suppressing Parthenium and its non-target effects.
c. Mass rear and field release *Listronotus setosipennis* in Ethiopia and conduct post-release monitoring.
d. Identify additional natural enemies to be released for control of Parthenium.
e. Secure Ethiopian Government and USAID permits to import additional natural enemies of Parthenium, conduct host specificity test, and field release.
f. Evaluate efficacy of released natural enemies and their non-target effects.
g. Assist Uganda, Kenya and Tanzania in biological control of Parthenium through awareness-raising, strategic planning, and initiation of mitigation activities
h. Partner with relevant host country organizations and other US universities, the CGIAR system, institutions in other countries and development community. The project applicant should demonstrate links to and leverage from the work of other relevant projects and avoid unnecessary duplication.
i. Work with the Management Entity to design and implement an evaluation of the spread and economic impact of any biocontrol agents released for Parthenium weed suppression.

3. Research and Activity Priorities

The overall IPM IL has four program objectives:

- Advance IPM science, and develop IPM technologies, information, and systems for sound sustainable intensification;
- Improve IPM communication and education, and the ability of the practitioners to manage knowledge, resulting in widespread adaptation, adoption, and impact of ecologically-based IPM technologies, practices and systems;
- Provide information and capacity building to reform and strengthen policies and national institutions that influence pest management; and
- Develop and integrate sustainable resource-based local enterprises into national regional and global markets.

In order to accomplish these program objectives, the IPM IL activities will :

- Identify and describe the technical factors affecting pest management;
- Identify and describe the social, economic, political, and institutional factors affecting pest management;
- Work with collaborating groups to design, test, evaluate, and disseminate appropriate participatory IPM technologies, packages, and strategies;
- Work with collaborating groups to promote training and information exchange on participatory IPM;
- Work with collaborating groups to foster needed policy and institutional changes**.**

Key expected 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 national institutions to reform and strengthen policies that influence pest management.
- Development of sustainable, resource-based local enterprises and their integration into regional, national, and international markets.

The overall purpose of the *Biological control of the invasive weed, P. hysterophorus in East Africa* project will be to suppress this weed in East Africa and to prevent its possible spread to Central and West Africa.

Specific activities will include field monitoring of *Z. bicolorata*, release and monitoring of *L. setosipennis*, identification and importation of additional natural enemies with necessary permits, host specificity testing, preparation of Environmental Assessments, field release and evaluation. Favorable consideration will be given to activities that involve significant scaling up of existing successful technologies in addition to the development of new technologies. A portion of the budget may be reserved for activities in support of areas identified through the IPM IL research sub-award competition. Such activities would necessarily be described after the sub-awardee is selected and that process will take place after the successful application is selected. To facilitate biological control of Parthenium a strong representation of entomology, plant pathology, weed science, agricultural economics, environmental science and gender is encouraged in the project.

4. Capacity Building

The project should include human and institutional capacity development at both the scientist and institutional levels. Details regarding the number of trainees, disciplines, location of training, and efforts to ensure gender parity of trainees, as well as the need for training of host country nationals, should be described in the concept note. Collaboration with host country universities is encouraged and may include curriculum development, academic support consistent with research programming, short courses, and other activities that support improved institutional capacity.

Outreach activities aimed at the end-user are required for all projects. These activities can occur via direct contact with end-users by project investigators or through third party organizations such as host country extension services, host country universities, NGOs, and NARS. Use of mass media (radio, TV, newspapers), internet, cell phones, E-Readers, on farm training, workshops and demonstration plots, for technology dissemination and scaling up is encouraged.

5. Gender

USAID policy requires that gender issues be addressed as appropriate for all USAID-funded activities and that gender differences and inequalities be integrated into the consortium activities and project design. The application must present a gender analysis which discusses important gender issues relevant to appropriate IPM research, development and extension activities. The application must explain how gender considerations and equality issues will be integrated into the design, implementation, management, knowledge sharing, capacity building, and monitoring and evaluation of the overall consortium activities and individual projects.

6. Project Design and Evaluation

The project must describe a results framework, including monitoring and evaluation, that is consistent with the overall objectives of the IPM IL supporting research, knowledge sharing, and capacity building and the ability to increase ecological intensification for the production of food. The framework must also support national objectives and will be part of the overall IPM IL Monitoring and Evaluation procedures. The project must be in compliance with USAID's Environmental Compliance Procedures described in Title 22 of the Code of Federal Regulations, Part 216 (22 CFR 216 http://www.usaid.gov/our_work/environment/compliance/22cfr216) and provide evidence of compliance with all relevant financial accounting procedures, regulatory compliance, responsible conduct of research, and the US Agricultural Terrorism Act of 2002.

7. Project Reporting

An annual work plan, budget, semiannual activity report summarizing results, impact analysis and results, trip reports, and research reports and summaries will be part of the reporting requirements. The IPM IL staff, USAID staff, and IPM IL technical advisory committee will review and provide feedback. Amendments or changes may be suggested during the annual review with respect to program and budget. Funding for the overall IPM IL budget, and hence for the subcontracts, is allocated on an annual basis. The project should have contingency plans in place for a 10% cut in funding to demonstrate abilities to achieve outcomes under an uncertain Federal fiscal environment.

8. Concept Note Information

Eligibility

US universities as defined under Section 296 (d) of Title XII of the Foreign Assistance Act, CGIAR centers, and host country institutions are eligible to apply as the lead institution for a period of 4.5 years. IPM IL will subcontract with the selected institution, which will then subcontract with collaborating organizations, at least one of which must include a U.S. university if not led by one. The institution making the application will be responsible for negotiating into sub-agreements with all collaborating organizations and for accounting to the Virginia Tech IPM IL for all program accomplishments, expenditures, and reporting requirements. The concept note should identify the nature of any collaborations, the distribution of labor and activities between collaborating organizations, and the budget allocations among collaborating organizations.

The IPM IL strongly encourages concept notes from, or for concept notes to include, qualified Minority Serving Institutions. These include, but are not limited to, Historically Black Colleges and Universities,

Predominantly Black Institutions, Hispanic Serving Institutions, Tribal Colleges and Universities, and Asian American, Native Alaskan and Pacific Islander Serving Institutions.

Importance of Human Resource and Institutional Capacity Development

Human and institutional capacity building (HICD) are core objectives and concept notes should indicate how this will be strengthened. There should be a demonstration of meaningful collaboration in research and training between a Lead institution and one or more Host Country institutions (public research institutions, universities, NGOs, etc.). Other partners such as U.S. universities and public and private sector research institutions (CGIAR, International agencies etc.) may also be subcontracted. Collaboration with multiple host country institutions is encouraged.

Project Funding, Budget Guidelines, and Cost Sharing

Approximately US$ 0.75 million is available through November 16, 2019 for the project. The concept note must contain a summary budget with projects and subcontracts clearly delineated using the budget template. Applicants are required to provide non-federal cost sharing which equals or exceeds any overhead earned on host country sub-awards. Favorable consideration will be given to proposals that further leverage consortium funding. At least 50% of the proposed budget should be spent to support in-country activities. Travel costs for host and U.S. scientists should be included and explained.

Format and Evaluation of Concept Notes

Concept notes must be in English with narrative portions prepared in MS Word with Times New Roman font size 11 and 1.15 line spacing. The summary budget tables must be prepared in Microsoft Excel utilizing the attached template. Page size should be 8 ½ x 11" with 1" margins. Table 2 lists the guidelines for submission of concept notes.

Table 1. Guideline for submission.

Component	Description
Title Page	Title; name, institution address, email, phone, and fax for lead PI at lead institution; lists members, total project budget, timeframe, and funds requested from IPM IL.
Executive Summary	Maximum one page
Narrative Description	Describes the project membership with clearly identified roles and responsibilities of all members. Focal topics and geographic areas, IPM components and packages, and research needs should be clearly articulated. Barriers to adoption of IPM components and strategies to overcome them should be identified. Opportunities for supporting research sub-award projects, capacity building, knowledge sharing, and strategies for addressing gender issues should be described. Provide a management and staffing plan.
Anticipated Results	Provide a narrative description referring to the results framework with clear indicators of measuring project results.
Expected Impacts	Describe expected impacts and how they will be measured.
Activity Plan	Provide a timeline of activities over the 4.5-year life of the project
Budget	Provide a summary budget sheet and for the project lead institution and all project members that will receive funding. The format specified by IPM IL must be used.

Budget Justification	Provide a one-page justification/explanation of budget expenditures.
References	List references used in the concept note narrative
PI Qualifications	In one page, provide a description of the qualifications of the PI at the project lead institution and for all relevant members in the project.
Curricula Vitae	Provide the CV for each PI/collaborator whose participation is described in the concept note.

Page length and order of sections-The total page length of the concept note, excluding title page, one-page summary budget, one-page budget justification, reference list, PI qualifications, and CVs, is 6 pages. Assemble all sections of the concept note into a single file and convert to a single pdf file for submission. The sections should appear in the following order: 1) title page, 2) executive summary, 3) narrative description, 4) anticipated results, 5) expected impacts, 6) activity plan, 7) budget, 8) budget justification, 9) references, 10) PI qualifications, and 11) relevant CVs.

9. Selection Process

An independent Technical Advisory Committee will review and score all proposals according to the following criteria (Table 3). Input may be sought from ad hoc reviewers, host country institutions, USAID Missions, and other relevant development organizations in making the final selection.

Table 2. Criteria used for the evaluation of concept notes

Criteria	Weight
Technical Merit, Including Management and Staffing	30%
Alignment with Target Country Research Priorities, IPM IL Goals and Objectives	20%
Knowledge Sharing and Outreach Activities	10%
Human and Institutional Capacity Development	10%
Gender programming	10%
Monitoring and Evaluation Activities	10%
Past Performance	10%

10. Submission of concept notes

Questions pertaining to concept notes should be sent to Dr. R. Muniappan, email: rmuni@vt.edu by 11:59 pm Eastern Time on January 9, 2015.

Concept notes should be submitted to Dr. R. Muniappan, email: rmuni@vt.edu by11:59 pm Eastern Time on January 30, 2015.

Selected References

Dhileepan, K. and L. Strathie. 2009. *Parthenium hysterophorus* L. (Asteraceae). In, R. Muniappan, G.V.P. Reddy and A. Raman (eds.). Biological Control of Tropical Weeds using Arthropods. Cambridge University Press, Cambridge, pp 274-318.

Mersie, W. and R. Muniappan. 2014. Status of *Parthenium hysterophorus* biological control in Ethiopia. Biocontrol News and Information 35: 34N.

Wabuyele, E., A. Lusweti, J. Bisikwa, G. Kyenune, K. Clark,W. D. Lotter, A. J. McConnachie and M. Wondi. 2014. A Roadside Survey of the Invasive Weed *Parthenium hysterophorus* (Asteraceae) in East Africa. Journal of East African Natural History 103:49-57.