



PRESIDENT'S MALARIA INITIATIVE



IVM FY11 Annual Report Summary

Integrated Vector Management (IVM) Task Order 2

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Content

A.	EXECUTIVE SUMMARY	3
B.	BACKGROUND SUMMARY OF IVM2 TASK ORDER.....	4
C.	COMPLETED ACTIVITIES IN FY11.....	5
C1.	CORE FUNDED ACTIVITIES	5
	IVM handbook and Monitoring and Evaluation Framework and Tools.....	5
	Global IVM Stakeholder’s meeting	6
	RBM Meeting.....	6
	Development of an IVM Information Portal (IVMProject.net).....	7
	Development of Capacity Building Tools.....	7
	Links with Private Sector.....	8
C2.	COUNTRY LEVEL (FIELD) ACTIVITIES	9
	ANGOLA	9
	BURUNDI.....	9
	DEMOCRATIC REPUBLIC OF CONGO.....	10
	ETHIOPIA.....	11
	LAC/AMI.....	11
	LIBERIA.....	12
	MALI.....	13
	RWANDA.....	14
D.	PROJECT MANAGEMENT	16
E.	FY11FINANCIAL SUMMARY.....	17

A. EXECUTIVE SUMMARY

National orientation to integrated vector management is a change process that involves qualitative components, as well as readily quantifiable or tangible components, and which process must be country-led to be sustainable. The qualitative components include the multi-faceted change to management processes and ethos critical to the appropriate placement of vector control within vector borne disease control efforts. The qualitative changes are precursors to the more tangible end goals of building relevant national human competencies and capacities in human resources and related infrastructure. The IVM Project made significant achievements in both components in the countries it undertakes field activities: It facilitated significant institutional reorganization and mentored major improvement in vector control operations in Rwanda. In Burundi and Liberia, the national malaria control programs now show serious commitment to adopt integrated vector management, and are being assisted with needs assessments and development of national strategies, concurrent with other country capacity strengthening efforts. The project developed capacity building tools (training manuals and videos on entomology) to fill in a significant gap in human resource strengthening by countries. Leadership was provided, in collaboration with global partners such as WHO, to develop guidance documents on policy, strategy and implementation. The project also played a very active role in discussions leading to the reorganization and enhanced mandate of the Roll-Back Malaria Vector Control Working Group, to more comprehensively address priorities beyond the traditional focus on insecticidal nets.

The IVM Project's strategic approach of facilitating country-led change has a downside; the pace of change is determined by the speed at which national change-agents (NMCPs) deal with entrenched constraints and inertia. Experience however shows that a country-led change process is comparatively more sustainable, as it obviates the usual scenario of "imposed" change recommendations that mostly get abandoned because of inadequate consideration of the relevant drivers and national preparation. The Project will focus, in FY12, on further consolidating the gains achieved and expanding direct support to additional USAID and PMI focus countries.

Some field obligations to the Project underestimate the resources required to undertake the assigned tasks. This severely hamstrung implementation and constrained staff capacity available to the tasks.

B. BACKGROUND SUMMARY OF IVM2 TASK ORDER

The *Integrated Vector Management for Malaria and Other Infectious Diseases* contract was signed in May 2007, to support the acquisition of commodities and the provision of relevant managerial capacity for the efficient and effective implementation of vector control interventions in innovative combinations and/or management settings. The specific objectives of the IVM Project are to:

- Provide a comprehensive range of expert implementation and technical assistance for a full range of activities to support the development of the capacities of national malaria control programs (NMCPs), enabling integrated approaches to the prevention and control of malaria and other infectious diseases, and to institutionalize best practices in NMCPs and their local collaborators.
- Support the continued technical development of IVM through collaborative work with relevant international institutions, operations research to develop new tools and best practices, institutional strengthening in IVM, and dissemination of relevant findings and experiences to the international malaria and development communities.

Scope of Work for the Task Order

- 1) *Integrated Vector Management*: Identification and deployment of qualified, expert short term consultants and/or qualified sub-contractors to:
 - a. Provide technical expertise and support in planning, implementation, management, monitoring and evaluation of vector control activities, focused on improved adaptive management for vector control;
 - b. Design, implement or evaluate training in key skill areas based on country-specific needs;
 - c. Design, implement or evaluate behavioral change communication interventions for control of vector-borne diseases;
 - d. Design, implement and/or evaluate monitoring activities, including both operational monitoring systems and periodic impact evaluation, including incorporation of and collaboration with existing disease and other health surveillance systems. These systems include networks monitoring insecticide resistance;
 - e. Prepare required environmental documentation for USAID Missions, including logistic planning documentation;
 - f. Perform other technical assistance duties such as planning and conducting rapid epidemiological and entomological assessments to provide key data regarding risk factors associated with priority infectious diseases and provision of related training for development partners;
- 2) *Operations Research*: Management of sub-contracts to international institutions and small grants to in-country organizations, through NGOs and other public and private institutions to conduct operations research on infectious diseases/vector control programs to strengthen best practices and ensure sustainable results.
- 3) *Institutional Collaboration*: To undertake collaborative work with international organizations such as the World Health Organization, UNICEF, the Bill & Melinda Gates Foundation, academic institutions both in the US and abroad, and private sector interests to advance the state of the art of vector control. This includes sponsoring country representatives from endemic countries to attend key international conferences, sponsoring symposia on technical issues, and actively supporting and participating in working groups to address specific operational or other issues identified by RBM or other collaborative mechanisms as priority issues for vector control.

C. COMPLETED ACTIVITIES IN FY11

Consistent with the scope of work described under Section A, the IVM project concentrated on:

- Work with global partners to complete development of the IVM handbook, the WHO policy guidance and the WHO IVM Monitoring and Evaluation guidance
- Development of tools and training materials and capacity building for entomological monitoring, program monitoring and evaluation
- Country capacity strengthening particularly of field and entomology laboratory technicians.
- Support country strategy development for national reorientation to IVM

The following sections provide a summary of the completed activities and achievements of the IVM Project during FY11 (01 October, 2010 - 30 September 2011). They are grouped under Core/Central and country specific activities, denoting the source of funding for those activities.

C1. CORE FUNDED ACTIVITIES

The IVM Project further consolidated its global leadership as a source of technical resource/services in vector control. The project worked closely with the World Health Organization (WHO) and the Roll Back Malaria Partnership, in identifying malaria control priorities, developing strategies and implementation guidelines for countries. Highlight of activities under the reporting period follows:

IVM handbook and Monitoring and Evaluation Framework and Tools

The urgent need for simplified tools and guidance to support country decision-making on IVM was recognized by the global vector control community. This led to effort towards the development of (i) IVM practitioner's handbook to guide implementation, and (ii) M&E tools for IVM implementation. The IVM Project played a leading role with WHO in the development of these documents, by co-funding and hosting technical/drafting meetings.

- *IVM Handbook*: The handbook is at the type-setting stage for final printing under WHO auspices. The publication is being funded by WHO. Earlier drafts of the have been available on the RBM Vector Control Working Group website. The publication and dissemination of this handbook will greatly help to clarify the strategy and steps for national reorientation
- *Development of IVM M&E tools*: The project co-sponsored a technical meeting on IVM monitoring and evaluation in Geneva (August 16-19, 2011) under the auspices of the WHO. The meeting initiated the development of a guidance document on harmonized and specific indicators for all aspects of IVM planning and implementation and establishes a framework to ensure comprehensive

measurement of outcomes and impact, Indicators are established for all the 6 main components of IVM: Policy, institutional framework, organization and management, planning and implementation, advocacy and social mobilization, and capacity building. In addition critical/core indicators on entomological outcomes and disease level impact are also provided. General guidance on organization of program monitoring and evaluation, collection of data, and dissemination and use of data, are also provided. The initial draft is currently being peer reviewed. There will be final core group meeting of expert in the second quarter of FY12 to finalize the document, incorporating comments and inputs from peers. Final publication by WHO is anticipated in May 2012

Global IVM Stakeholder's meeting

Co-organized and co-funded second IVM stakeholder's meeting in Geneva (January 12-14, 2011) with WHO. The meeting was attended by Project Director, Project Coordinator, Rwanda IVM advisor and Rwanda NMCP vector control coordinator. Participants included a broad range of partners from national programs, the commercial sector, academia, donors, and international and bilateral organizations.

Gains in malaria control are threatened by the emergence of insecticide resistance in Africa; in Asia and the Americas, countries are struggling to respond to increasingly large epidemics of dengue sweeping through their communities. Natural disasters, floods and earthquakes accompanied by fly and mosquito-borne disease outbreaks are challenging emergency relief operations. Constricting financial resources and a shortage of public health professionals are compounding these problems.

The reorientation of national control programs towards IVM provides an opportunity to tackle such problems and improve the efficacy, cost-effectiveness, ecological soundness and sustainability of programs. The IVM stakeholders agreed on the tools, advocacy needs, training products, manuals and policy frameworks needed to achieve these goals as well as the partnerships, strategies and plans to implement programs. Stakeholders are committed to pool resources, share expertise and work together to further develop the tools and products for vector control, and to use the IVM framework to rationalize and optimize efforts to meet the growing global challenges of malaria, dengue and other vector-borne diseases.

RBM Meeting

The IVM project participated in the sixth annual meeting for the Roll Back Malaria partnership vector control working group that took place from 7-9 February 2011 in Geneva, Switzerland. The meeting was attended by 136 participants from a very broad range of partners from the commercial sector, national programs, international and bilateral organizations, academia and donors. The meeting brought together partners to focus on specific challenges and outputs related to discussed pertinent issues around the following work-streams: vector resistance to public health insecticides, outdoor malaria transmission, evolving continuous LLIN distribution systems appropriate to the universal coverage policy, monitoring the durability of LLINs in the field, capacity building for IRS, larval source management, optimizing evidence for choices of vector control methods (e.g. investments in combining IRS and LLINs and new technology of durable wall linings), entomological monitoring and IVM.

The director of the IVM Project (Jacob Williams) co-chairs the work-stream on entomological monitoring and IVM. He also made plenary presentations on the subject area and is a frequent contributor to overall working group strategy discussions.

Development of an IVM Information Portal (IVMProject.net)

The IVM information portal, which development began towards the end of FY10 came online at the end of March 2011. Editing and page-population are on-going and input is being solicited from partners to populate the partner pages. The website was presented at various technical meetings and received high commendation from partners as a worthwhile venture. The information portal is aimed at systematic collation of relevant vector control findings, and implementation experiences and lessons by countries and research agencies. It provides an opportunity for country programs to access information to support decision making. Beginning in second quarter of FY12, the portal will also host a “list-serve” and discussion board, where program managers and other workers would have an interactive setting to pose pressing questions and receive focused expert support from partners/members. In addition, training aids (e.g. IVM training videos and entomology manuals) and other salient publications currently being developed by Project and partners will be disseminated through the website¹. The website will also host a searchable database of published documentation, contact lists of vector control practitioners and vector control/entomology training institutes around the globe (highlighting areas of expertise and capacities).

Development of Capacity Building Tools

As a response to the paucity of trained country level staff to sustain the transitioning to IVM, the project initiated the development of critical tools and training materials to increase access to entomological expertise within countries.

Entomology Training Videos: video modules covering the following standardized methodologies were produced and made available on DVD and on *IVMProject.net*:

- Hand Collection of Adult Mosquitoes
- Collection of Larvae and Pupae
- Mosquito Lifecycle and Diagnostic Characteristics
- Spray Sheet Collection of Adult Mosquitoes
- Cone Assays for Testing Efficacy of Insecticides on Sprayed Surfaces

The Project has been disseminating the videos to USAID/focus countries, as well as other vector control partners. Following unanimous request by LAC/AMI countries for similar tools, the video scripts were subsequently translated into Spanish, and were re-filmed in Colombia in July to suit the socio-cultural

¹ The initial training videos on standardized entomological methods (English) developed for the Africa region, may be directly accessed from the webpages.

context of the Latin American region (ref: LAC/AMI Section for additional information). Apart from the above list, the following additional videos were also filmed during FY11 and are undergoing final editing and peer review for release by February 2012:

- WHO Tube Assays for Insecticide Susceptibility Testing
- CDC Bottle Assay for insecticide Susceptibility Testing
- Knock-Down Tests for LLINs
- LLIN Delivery and Installation

Entomology Training Manual: Credible national capacity for entomological surveillance and monitoring is critical to the success and sustainability of any vector control intervention. To support country capacity strengthening the IVM Project has developed a 3-week intensive basic course in entomology, which is aimed at providing field and lab technicians engaged in vector control, with (i) basic knowledge on the ecology of mosquito vectors and (ii) core competencies/skills on the various standardized methodologies used for malaria vector surveillance and monitoring. The course provides a combination of theoretical classroom approaches/exercises, and extensive field work and practical demonstration aimed at building first-hand experience and familiarity with the various techniques. A training manual has been developed for the course, which was successfully field-tested in a number of PMI countries across Africa in 2010 (Angola, Liberia, Ghana, and Rwanda). The manual is currently undergoing peer review and would be published in March 2012.

Harmonized IVM Curriculum: The project collaborated and co-funded development of a harmonized IVM training curriculum, in collaboration with WHO, Johns Hopkins University, US Pesticide Management Board and Malaria Consortium. The product is aimed at ensuring that all training programs of partners adequately address critical concepts and competencies. The harmonized curriculum will inform the development of harmonized modular training materials to target various levels of training (i.e. basic, intermediate, and advanced) and should suitably be adapted to regional and country situations. The draft guidelines were field-tested in South East-Asia and Africa.

Links with Private Sector

The project provided strategic guidance to GBCHealth and the Corporate Alliance for Malaria in Africa (CAMA). The project was invited to make presentations on priorities for malaria vector control at meetings of the two affiliated organizations. There was consensus to collaborate on the following field activities:

- Completion of the entomology laboratory in Angola and follow up advanced training of entomology technicians to run the facility and coordinate national monitoring (ref: Section on Angola). The activity will be follow-on to the FY10 collaboration which saw the training of 45 entomology technicians from various provinces of Angola.
- In DRC, GBCHealth and Vestergaard Frandsen will contribute to national entomology capacity strengthening

C2. COUNTRY LEVEL (FIELD) ACTIVITIES

ANGOLA

Insectary/entomology laboratory development: All preparations for the construction of an insectary and entomology laboratory at Vienna were concluded during the last quarter of FY11, ushering the start of construction in October 2011. This activity has faced multi-year delays, largely as a result of (i) changing NMCP plans/decision on the location of the insectary and (ii) unresolved issues relating to the continued oversight of the lab once completed. The latter reason led PMI to issue a temporary “stop-work” order at a point. A final site was selected by the MOH/Angola in FY11, which resulted in new architectural designs being drawn up by the project and reviewed by CDC.

- The Project, in collaboration with USAID Regional Environmental Officer and CDC, completed an Initial Environmental Examination (IEE) for the new site and construction.
- A final determination of the funding gap was assessed during the 3rd quarter of FY11, as the delay resulted in a rise in the cost of materials and construction. An additional amount of \$75,000 was approved and provided by PMI. With the receipt of the funds, the contract between RTI and the local sub-contractor (AFDER) was updated and signed.
- The Project established an MOU with NMCP relating to oversight and management of insectary post-construction

There are ongoing discussions with GBCHealth to support equipping the insectary and laboratory (office and laboratory equipment and installments) as well as targeted training of nationals who will be running the facility. The training will be conducted by the IVM project in close coordination with CDC.

BURUNDI

Development of a national IVM strategy:

- Field Support obligation of \$50,000 was provided in the course of FY10, for the development of a national IVM strategy for Burundi. At follow up meetings, the project informed the Burundi country team and CTO that the amount provided could only barely complete a National Vector Control Needs Assessment² and that an additional obligation of \$70,000 would be needed for the development and

² The development of a national IVM strategy is a 2-step process, involving (i) the conduct of a national vector control needs assessment (VCNA), which then informs (ii) the development of national IVM strategy and work plans: The VCNA reviews the current framework and status of vector control; identify the root causes of existing constraints to the achievement of set goals, identify opportunities and requirements for addressing those constraints and recalibrating operations to increase efficiencies and maximize sustainable reductions in disease burdens.

completion of the IVM strategy. This was included in the FY11 work plan. The project was informed no obligations had been made for IVM for FY11. In the meantime, STTA undertaken by the project to Burundi had resulted in the identification of priority entomological capacity strengthening, which the USAID/Burundi agreed to fund³. The agreement reached during various discussions with CTO and Burundi Country team was that, the project will take advantage of the opportunity provided when the funding for entomological capacity strengthening is obligated to also conclude the IVM strategy.

- The project undertook an STTA in the first quarter of FY11 to conclude the VCNA. A draft report was reviewed at a national stakeholder's meeting, which was attended by NMCP, WHO, Red Cross, and other selected national agencies. A final VCNA report will be validated during an upcoming travel in November 2011, to pave the way for the drafting of the IVM strategy. It is anticipated that the IVM strategy will be completed during the second quarter of FY12 (March 2012).

Support to country capacity for entomological monitoring:

- A supplementary work plan was submitted during FY11 to support entomology capacity strengthening (rehabilitate an insectary/entomology laboratory facility and conduct target training of entomology technicians). This was approved and funding was received at the end of the 4th quarter (September 2011) as the FY12 obligation. This activity will be initiated during the upcoming Project visit in November.

DEMOCRATIC REPUBLIC OF CONGO

Funding was obligated during FY11 to support baseline entomological study and related capacity strengthening. The project undertook a TDY in the third quarter of 2011 to elaborate a scope of work with the NMCP/DRC and to identify national implementation partners.

Subsequently national partners have been identified (Institut National de Recherche Biomédicale, School of Public Health) who will work under the direction of the NMCP to carry out field activities. Meetings with the national partners led to the identification of sampling sites and the plan of action, which involves the training of nationals (entomology technicians), provision of basic equipment, as well as the development of evaluation protocols. The protocols have since been developed, critical equipment (microscopes, etc) are being procured, and field activities will begin in November/December 2011.

³ An amount of \$175,000 has been obligated to cover the rehabilitation of the insectary/entomology lab and related training in FY12. The opportunity provided by STTA linked to these activities will be utilized to also complete the National IVM strategy.

Concurrently, discussions were held with some corporate members of GBCHealth that are engaged in significant business initiatives in the country. Vestegaard-Frandsen has agreed to partner with the project to undertake entomology capacity strengthening activities.

ETHIOPIA

- An obligation of \$300,000 was made during FY11 to fund two activities related to operations research on larval source management and a reorientation of the national vector control strategies towards IVM. The larval source management work was stalled due to budget and partner collaboration issues. This and the IVM activity are under revisions and discussion with the mission.

LAC/AMI

Technical and Steering Committee Meetings: The project has been providing technical support on a range of activities from policy and strategy development through to program management, implementation and evaluation. The project has participated and actively contributed to technical discussions and priority agenda for vector control within LAC/AMI. The project participated and provided technical input to a number of meetings:

- *The 10th Annual AMI/RAVREDA meeting* in Panama from March 22-24 and the AMI/RAVREDA steering committee meeting on March 25: The Project made a presentation on entomological and vector control priorities for malaria eco-epidemiological scenarios of Latin America and a presentation of project activities in Africa. A third presentation covered the creation of an IVM website and entomology tools and training materials being developed (entomology training videos, manuals etc).
- *LAC/AMI Entomology Core-Group Meeting:* the Project participated in a core-group meeting at the PAHO office in DC with PAHO and CDC on 6-7 April, 2011. The meeting outlined vector control priorities in the region and set partnership roles and range of activities
- *The 20th AMI/RAVREDA steering committee meeting:* This meeting took place at PAHO's DC office on September 13-14, 2011. The Project's ongoing activities as well as FY12 AMI work-plan were presented. A subsequent meeting of the Vector Control Partners under AMI (CDC, PAHO and RTI) 1-4 November 2011 in Guatemala will harmonize the plans and develop a three year AMI vector control agenda. The IVM Project also took part in the AMI 10th Anniversary event at PAHO on September 15, 2010, where a poster presentation on the project was made.

Support to the development of Regional strategic documents: Project supported the development of a regional vector control strategic document, in collaboration with CDC and PAHO. The draft has been finalized and is undergoing peer review.

Development of entomological tools:

- Based on requests expressed at meetings, the project is developing entomology training tools, which include videos on standardized entomology field techniques and an accompanying entomology manual. Eight entomology training videos were filmed from July 12 – 24, 2011 in Bogota, and in the Chocó and Meta regions of Colombia, in close collaboration with PAHO. The videos were filmed by a videographer from RTP's media division with technical assistance from the National University of Colombia and Colombia's National Institute of Health. The video modules include the following:
 - *Mosquito lifecycle and diagnostic characteristics*
 - *Collection of mosquito larvae and pupae*
 - *Hand collection of adult mosquitoes*
 - *Cone assays for testing the efficacy of insecticides on wall surfaces*
 - *Cone assays for testing the efficacy of insecticides on long-lasting insecticidal nets*
 - *WHO tube test for insecticide susceptibility*
 - *CDC bottle assay for insecticide susceptibility*
 - *Distribution and installation of long-lasting insecticidal nets*

Initial editing has been completed at the RTI AudioMedia studios in North Carolina, under the oversight of project staff and supported by staff of the National University of Colombia and the Colombia National Institute of Health. The videos will be reviewed by the entomology group within AMI and selected peers outside of AMI, after which the narrations will also be recorded in English and Portuguese.

- An accompanying entomological manual has been developed for entomology technicians training and is undergoing peer review. All the documents and videos will be ready by the end of February 2012, and available on disk and on the website.

Enhancing Staff time for LAC/AMI:

To ensure adequate staff capacity to support the expanding portfolio of work by the IVM project under LAC/AMI, discussions were held with Coordinator/AMI to partly support the position of an IVM Advisor/Senior Entomologist. This will be implemented in FY12.

LIBERIA

Advanced Entomology Training: A two-month advanced entomology training was concluded in the first quarter of FY11. The training was conducted for four Liberian nationals at Noguchi Memorial Institute for Medical Research, University of Ghana from August 23-October 22, 2010. Training participants included two representatives from the Liberian Institute for Biomedical Research (LIBR) and two officers from the Liberian National Malaria Control Program. The purpose of the training is to enable initiation of

a comprehensive entomology monitoring scheme for Liberia, which will include ELISA-based evaluations, as well as an effective running of the insectary and laboratory once it is completed. Training topics included sporozoite and bloodmeal ELISAs, parity dissections, mosquito identification, insectary management, tube, bottle and cone bio-assays, and field mosquito collection techniques.

Insectary and Laboratory: The project is supporting the establishment of an insectary and related entomology laboratory at LIBR. The IVM project procured basic entomological equipment, for FY10 training on basic entomology of 45 technicians. The equipment has been designated for distribution to the entomological sentinel site and primarily to equip the central insectary and entomology laboratory at LIBR. The insectary will have the capacity to conduct ELISA-based evaluations and for which the Project initiated the procurement of ELISA equipment in February 2011. While some equipment have been procured, the remaining items will be procured and installed when the insectary construction is completed.

IRS National Strategy: At the request of PMI, the IVM Project developed a national IRS strategy for Liberia. While this was not part of the agreed work plan for FY11, PMI/Liberia, in consultation with the NMCP, felt this was a priority product to guide future decisions on IRS. The activity was completed without additional obligation and did not raise the ceiling of FY11 field obligations for Liberia

Vector Control Needs Assessment and National IVM Strategy: A supplementary work plan was approved in February 2011 to conduct a national VNCA to enable an enhancement of the overarching national IVM strategy. The Project is supporting the development of a national IVM strategy and work plans. This is a 2-step process, involving (i) the conduct of a national vector control needs assessment (VCNA), which then informs (ii) the development of national IVM strategy and work plans: The VCNA reviews the current framework and status of vector control; identify the root causes of existing constraints to the achievement of set goals, identify opportunities and requirements for addressing those constraints and recalibrating operations to increase efficiencies and maximize sustainable reductions in disease burdens. The VCNA has been drafted and will be evaluated at an upcoming TDY in November 2011. This will lead to the development of the national IVM strategy anticipated to be concluded by end of February 2012⁴.

MALI

Field Obligation of \$100,000 was made in FY11 to support the development of national IVM strategy. Project undertook an STTA from end of January - February, 2011 to Mali to initiate the VCNA as the first of the two step process to developing the IVM strategy. The Mission also requested support for the development of a national IRS strategy.

⁴ Timelines for the completion of the IVM strategy provided in the supplementary work plan of February, was overly optimistic on the availability of data and other critical information.

National IRS Strategy: The National IRS Strategy was drafted, translated into French and submitted in August 2011 to the NMCP and PMI/Mali. The NMCP is being followed for feedback to enable finalization of the strategy

Vector Control Needs Assessment: The VCNA was conducted in close collaboration with WHO/Mali and a local consultant from MRTC/Mali. To overcome a rather significant difficulty in obtaining relevant data and information from national programs and partners, the project funded a follow-up meeting of the directors of relevant programs under major public sectors (e.g. Agriculture, Environment) and other national stakeholders under the auspices of WHO/Mali in May 2011 [this was done in place of the normal “initial stakeholders meeting”]. This meeting provided some needed critical information for the VCNA. The VCNA report has been drafted and is under review.

National IVM Strategy: The FY11 budget had indicated an additional funding requirement of \$35,000 to complete the IVM strategy development. For the second half of the year, critical information has been collated to enable the process of IVM strategy development to be concluded with the receipt of the additional funding. With the FY12 obligation of an additional \$50,000 as presented in the FY12 MOP, the process of developing the national strategy can be concluded in FY12.

RWANDA

Technical Assistance: A Resident IVM Advisor (Dr John Githure) was recruited for Rwanda in Jan 2011. He provided the following technical assistance to the Malaria Division:

- Together with the Head of Malaria Vector Control, conducted three training workshops on IVM for 3 districts in Kigali City (Nyarugenge, Gasabo, and Kicukiro). More than 160 participants were trained using training manuals adapted from the WHO core curriculum on IVM for non-professionals.
- Provided hands-on and day-to-day oversight functions for the insectary and for entomological monitoring activities including insecticide susceptibility assays, both for the wider national evaluations linked to the sentinel sites, as well as specific monitoring under the IRS operations.
- Initiated molecular identification of local malaria vectors, as well as the insecticide resistance mechanisms. A batch of 500 mosquito samples was sent to ICIPE (October 2011) for PCR identification and results are awaited.
- Participation in the WHO-led National Malaria Program Review in March 2011. IVM was specifically highlighted as the key malaria prevention method towards malaria pre-elimination phase in Rwanda and highlights a significant outcome of the strategic approach to mentor and shepherd national orientation.

- Technical assistance to an overall malaria gap analysis; the development of a national Malaria Strategic Plan (2012-2017); development of a Global Fund Proposal Round 10 to be submitted in March 2012 and technical support to NMCP preparations/planning for PMI/MOP-12
- Contributed to the development of LLINs distribution guidelines, the entomological monitoring protocol and evaluating the impact of IRS on malaria protocol.

Vector Control Needs Assessment: The country held a validation meeting of VCNA report (February 2011) where 65 representatives of national stakeholder organizations, including nine government ministries, six government parastatals, six NGOs, four research and training institutions and other international partners [USAID/PMI, WHO, FAO, UNEP, RTI (IRS and IVM projects) etc.] met to validate the report and mandate the PNLIP to spearhead the development of a national IVM strategic plan and implementation process, as proposed in the VCNA report. An IVM focal point (Emmanuel Hakizimana) was also appointed to oversee the implementation process. He registered for a PhD at Wageningen University, Netherlands on the subject of IVM and the IVM Advisor is one of his University supervisors.

- On 2 June 2011, the Acting Director General of TRACPlus and Director/ PNLIP (Dr. Corinne Karema) and Head of Vector Control Unit/PNLIP presented the finalized VCNA report to the senior management committee of the MOH, which is chaired by the Minister of Health. The report was formally approved by the committee and submitted for signatures with a preface signed by the Minister of Health and a foreword by the Permanent Secretary of the MOH.
- The IVM Project, through the VCNA, influenced the re-structuring of the PNLIP, which was renamed *Division of Malaria and Other Parasitic Diseases* (MOPD) in June 2011. As recommended by the VCNA, a broadened scope will ensure integration of other vector-borne diseases in its portfolio so as to provide more interaction and collaboration with other sectors towards IVM implementation.

The National IVM Policy and Strategy:

With the formal approval of the VCNA all but assured, the Project initiated the development of the national IVM policy and strategic document. Salient points and major ideas that will be in the proposed National IVM Policy and Strategy were discussed and accepted by the PNLIP during a May 2011 TDY by the Project Director. PNLIP indicated that there was on-going internal reorganization, partly arising from the recommendations of the VCNA report, as well as a wider restructuring of sections of the MOH, which will impact on the existing structure of the TRAC-PLUS and PNLIP itself. The Program also indicated an upcoming national malaria gap analysis, leading into the development of a new national malaria strategic plan. In view of the above, the PNLIP requested that the completion of the IVM strategy be temporarily put on hold for a few months in order to benefit from the outcomes of these processes. The IVM strategic documents are currently under development with a new completion end-date of 30 November 2011, and a formal approval by the Minister of Health anticipated in the second quarter of 2012.

D. PROJECT MANAGEMENT

The Project draws upon significant in-house (RTI) expertise, as well as expertise from collaborating institutions/ partners and individual experts (as needed) to undertake the activities. The Project staff are:

- Project Director: Jacob Williams
- Senior Operations Specialist: Ms Cheri Brown
- Project Coordinator: Ms Kathryn Welter
- IVM Advisor/Snr Entomologist: To be recruited in November 2011

At the specific request of Malaria Unit/TRAC-PLUS of the Ministry of health Rwanda and the approval of PMI/Rwanda, an IVM Advisor (John Githure) was recruited to work with the Malaria Unit. The Advisor, assumed duty on 2 January 2011, and has been providing critical support for scaling up vector control implementation, including the strengthening of national capacity for entomological surveillance and monitoring, as well as the development and implementation of a national IVM strategy.

As required, and with the concurrence of USAID, consultants are also hired and sub-contracts established to undertake specific field activities

E. FY11 FINANCIAL SUMMARY