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RESPOND YEAR THREE WORKPLAN

EMERGING PANDEMIC THREATS PROGRAM

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RESPOND YEAR THREE WORKPLAN

EMERGING PANDEMIC THREATS PROGRAM

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ACRONYMS

AFENET	Africa Field Epidemiology Network
AFRO	WHO—Regional Office for Africa
APACPH	Asia-Pacific Academic Consortium for Public Health
ASEAN	Association of Southeast Asian Nations
AU	African Union
AU-IBAR	African Union Interagency Bureau for Animal Resources
AVET	Applied Veterinary Epidemiology Training
BTC	Belgian Technical Cooperation
CARPE	Central African Regional Program for the Environment
CDC	Center for Disease Control and Prevention
CSTE	Council of State and Territorial Epidemiologists
CVM	Makerere University College of Veterinary Medicine
DNP	Department of National Parks, Wildlife and Plant Conservation, Thailand
DRC	Democratic Republic of Congo
DSO	District Surveillance Officer
E&E	Ecology & Environment, Inc.
EC	East Congo Basin
EID	Emerging Infectious Diseases
EIS	Epidemic Intelligence Service
EPT	Emerging Pandemic Threats Program
FAO	Food and Agriculture Organization of the United Nations
FE(L)TP	Field Epidemiology (Laboratory) Training Program
FESC	Field Epidemiology Short Course
FETP-V	Field Epidemiology Training Program—Veterinary Component
FOREST	Forest Ecology and Stewardship Training
FUE	Federation of Uganda Employers
FUS	Fédération Une Santé (One Health Federation)

GL	Global
HPAI	Highly Pathogenic Avian Influenza
IATV	Institut Technique Agricole and Vétérinaire
ICCN	Congolese Wildlife Authority
ICT	Information Communication and Technology
IDSR	Integrated Disease Surveillance and Response
IEM/ITM	Institut d'Enseignement Médical/Institut Technique Médical
IHR	International Health Regulation
INCEF	International Conservation and Education Fund
IRCM	Integrated Regional Coordination Mechanism
ISP	Institut Supérieur Pédagogique
ISTM	Institut Supérieur des Techniques Médicales
KOMNAS FBPI	National Committee for Avian Flu Control and Pandemic Preparedness, Indonesia
LOW	Line of Work
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industries, and Fisheries, Uganda
MAFF	Ministry of Agriculture, Forestry and Fisheries, Cambodia
MENTOR	Mentoring for Environmental Training in Outreach and Resource Conservation
MoH	Ministry of Health
MoPH	Ministry of Public Health
MPH	Master of Public Health
MS	Master of Science
NAC	National Agricultural College, Laos
NADDEC	National Animal Disease Diagnostic and Epidemiology Centre, Uganda
NEIDCO	National Emerging Infectious Diseases Coordination Office
NUOL	National University of Laos
OHCEA	One Health Central and Eastern Africa
OHSEA	One Health Southeast Asia
OIE	World Organization for Animal Health

PA	Protected Area
PAT	Protected Area Teams
PDSR	Participatory Disease Surveillance and Response; Participatory Disease Surveillance and Response Network
PE	participatory epidemiology
PIA	participatory impact assessment
PMM	Program for Monitoring Emerging Diseases
PPE	Personal Protective Equipment
Pro-MED	Program for Monitoring Emerging Diseases
RDMA	Regional Development Mission—Asia
SAFETYNET	South Asia Field Epidemiology and Technology Network
SE	Southeast Asia
SMT	Senior Management Team
SRRTs	surveillance and rapid response teams
TEPHINET	Training Programs in Epidemiology and Public Health Interventions Network
TRG	Training Resources Group, Inc.
TUSK	Tufts University Sciences Knowledgebase
UMA	Uganda Manufacturers Association
UMN	University of Minnesota
UVRI	Uganda Viral Research Institute
VMKKU	Khon Kaen Veterinary Medical School
VPH	veterinary public health
WC	West Congo Basin
WCB	West Congo Basin
WCS	Wildlife Conservation Society
WHO	World Health Organization
WILD	Wildlife Investigation and Livestock Disease
WWF	World Wildlife Fund/World Wide Fund for Nature

SUB-ACTIVITY CROSS-CHECK

Because this work plan is arranged by region and country, it can be difficult to track the sub-activities by objective. This cross-check is intended to help readers locate specific sub-activities, by objective, if required. Please note that the abbreviations after each sub-activity refer to the implementation region (Global, East Congo, West Congo, Southeast Asia).

Table 1: Sub-Activities by Objective

Sub-Activity	Sub-Activity Title	Page #
Objective 1: Improve Training Capacity for Skills Necessary to Respond to Suspected Outbreaks		
1.1.4 GL	Develop EPT program-wide definition of One Health core competencies	13
1.2.1 WC	Conduct twinning and mentoring with universities and vocational schools	29
1.2.1 SE	Implement twinning and mentoring program	40
1.2.2 SE	Support relationship between Khon Kaen Veterinary Medical School (VMKKU) and the Faculty of Agriculture, Nabong Agricultural College (NAC) campus, National University of Laos (NUOL)	41
1.2.3 WC	Upgrade the skills of faculty at Institut Supérieur Technique Medical (ISTM); at Institut Technique Agricole and Vétérinaire (ITAV); Institut d'Enseignement Medical/Institut Technique Medical (IEM/ITM)	35
1.2.3 EC	OHCEA Aug 2011 - September 2012 (YEAR 2 & 3) Workplan	21
1.2.4 EC	OHCEA Network Development	22
1.2.4 GL	Global Network Organizational Development	14
1.2.5 EC	OHCEA Innovation Partnerships	22
1.3.1 WC	Support regional and international exchanges of personnel to improve outbreak response and control; develop an action plan to strengthen and enhance ongoing career path development in the Democratic Republic of Congo	30
1.5.1 WC	Conduct professional continuing education through didactic and field training workshops using the Wildlife Investigation and Livestock Disease (WILD) module	31
1.5.2 SE	Applied field training for wildlife veterinary medical officers and field pathologists	43
1.5.4 EC	Residency based knowledge partnership model for building veterinary public health competence in Uganda	23
1.5.5 SE	Master's degree program for human & animal health professionals at Thailand's Field Epidemiology Training Program (FETP/FETP-V) and international FETP (iFETP) to strengthen career opportunities, and the management, supervisory and response capacity for outbreaks and epidemics of zoonoses and emerging infectious diseases	44
1.5.5 WC	Support the MENTOR-FOREST program focused on extractive industry issues by adding One Health content and supporting fellows and a mentor from Gabon and Republic of Congo	32
1.5.6 SE	Monitoring and disease surveillance training for Department of Forestry Protected Area staff and Forestry Volunteers in Lao PDR	48
Objective 2: Improve Cross-Sectoral Linkages to Support Coordinated Outbreak Response		
2.2.1 GL	Develop best management practices recommendations for extractive industries in hotspot regions	16
2.4.4 SE	Support for TEPHINET to host global conference and add One Health sessions	42
Objective 3: Improve the Capacity to Conduct Investigations of Suspected Outbreaks		
3.1.1 WC	Strengthen systems for disease surveillance, outbreak investigation and response with a One Health approach and response.	33
3.1.2 GL	Government innovations supporting integrated disease surveillance and response in human and animal health	15
3.2.0 GL	Outbreak response support	17

Sub-Activity	Sub-Activity Title	Page #
3.2.0.4 EC	Strengthening surveillance, reporting & diagnostic capacity to Improve Early Detection, Diagnosis & Response to Disease Outbreaks in Humans, Livestock, and Wildlife	24
3.2.0.5 EC	Private sector outbreak response training	25
3.2.2 EC	Strengthening existing platforms for outbreak response in Uganda	26
3.3.1 GL	ProMed Mail: Expanding surveillance and verification for wildlife diseases	18
3.4.1 SE	District and provincial zoonotic disease outbreak response training, Indonesia	50
3.4.1 WC	Deliver refresher outbreak response training to rural medical personnel and first-responder training in the USAID-CARPE Salonga-Lukenie-Sankuru Landscape	36
3.4.2 SE	Support training to strengthen One Health epidemiological teams with focus on AVET training at selected provincial and district levels (Vietnam)	46
3.4.4 SE	Support training to strengthen One Health epidemiological teams at the provincial and district levels (Thailand)	45
3.4.5 SE	Support training to strengthen One Health epidemiological teams at selected provincial, district, and village levels (Laos)	44
3.4.4 WC	Outbreak response training for multi-disciplinary teams at national and sub-national levels, including training of front-line health workers in outbreak response	34
3.4.7 SE	Support training to strengthen One Health epidemiological teams, including MOH and MOA staff, at selected provincial and district levels (Cambodia)	47
Objective 4: Introduce Technologies to Improve Training, Surveillance, and Outbreak Investigations		
4.1.2 WC	Evaluate existing Knowledge Management Systems for the health science, their application and use in the university context, and support the improvement and integration of appropriate systems	36

EXECUTIVE SUMMARY

INTRODUCTION

The RESPOND project began in October 2009 with a mandate to strengthen training, educational programs, and support to governments, universities and civil society with the objective of using One Health tools and approaches to improve worldwide capacity to respond to emerging infectious diseases of zoonotic origin. One Health is the collaborative effort of multiple disciplines, including medicine, veterinary medicine, public health and others, to more effectively protect the health of people, animals, and the environment. During the first Year of operations the RESPOND team established a headquarters office in Bethesda and regional offices (hubs) in East and West Congo (Kampala and Kinshasa, respectively) and in Southeast Asia (Bangkok) to build a foundation for supporting key outbreak-related activities and initiatives in collaboration with countries participating in the USAID Emerging Pandemic Threats (EPT) program. In Year 2, RESPOND initiated field activities and began development of regional One Health networks. In Year 3, RESPOND will build on the fact-finding, relationship-building, and groundwork for broad-based regional efforts to support improved outbreak response. Specifically, we will focus on continuing the development of One Health networks of universities, while working with governments to improve the policy frameworks for outbreak response using One Health approaches.

This Year Three plan outlines existing and new global, regional and national activities that will support a comprehensive, country-specific approach designed to more efficiently and effectively respond to outbreaks, including those caused by novel infectious agents, and thereby help to safeguard public health.

YEAR THREE WORKPLAN PROCESS

The development of the Year Three Workplan has been a highly interactive process, involving all RESPOND staff and based on findings from hundreds of discussions and stakeholder meetings in the field. In each Regional Office, staff undertook a weeklong workplanning session to ensure comprehensive, coordinated implementation plans. With guidance and support from the RESPOND headquarters office, each Regional Office developed specific sub-activity plans, as well as narrative contributions to the RESPOND work plan.

The process to develop the Year Three Workplan included the following steps:

1. Each Regional Office reviewed existing activities to determine whether they would continue into Year 3, and identified potential new activities to be launched in Year 3;
2. Regional teams developed detailed plans for each sub-activity, including narrative descriptions, implementation plans, implementing partners, expected results, and detailed budgets;
3. Technical staff from RESPOND headquarters reviewed each sub-activity plan for accuracy, completeness, and consistency with overall project objectives;
4. RESPOND Senior Management Team short-listed priority activities based on available funding, and finalized budgets; and
5. RESPOND Senior Management Team and senior technical staff worked carefully with regional offices to identify new activities for possible rapid approval by USAID as well as key activities that currently cannot fit within the existing budget but that remain excellent contributions to national and regional programs, should additional funding become available.

RESPOND PRIORITIES

Global Priorities

RESPOND's priority global activities directly support the regional strategy. Priority global activities will create a framework for network development, and provide consistency in approaches and governance structures across regional networks; global activities will also support broad-based collaboration with and capacity building of regional governments to fully enable them to implement policies that support One Health approaches.

Congo Basin Priorities

RESPOND has two priorities for Africa in Year 3: to continue OHCEA network development and improve engagement with governments in the region to improve the policy frameworks and support for outbreak response. The East Congo Basin office will focus on support to OHCEA and engagement with governments in East Africa. The West Congo Basin office will contribute to OHCEA development, and focus on building the capacity of institutions in the West Congo region to fully participate in regional network activities.

Southeast Asia Priorities

RESPOND's priority in Southeast Asia will be to continue to support development of OHSEA to improve One Health education at the university level (pre-service training), so that the university graduates who will be the future workforce better understand the cross-disciplinary nature of outbreak response work. We will also collaborate with Universities to support the region's national governments in outbreak response training as relevant/requested, and leverage the strong coordination between universities, government and private industry.

2012 HIGHLIGHTS

As RESPOND enters its third year, the focus of the program will shift to implementation and expansion of existing activities rather than a tranche of new activities (as in Year 2). A deeper understanding of the constraints and challenges facing each region has allowed us to tailor our activities to regional needs, while still working within the framework of RESPOND's overall objectives. For the project, this means:

- RESPOND is no longer in an expansion phase; rather, we are deepening our work with networks and governments; focusing specifically on capacity gaps with weaker institutions; and identifying ways to shift activity management from the project to our network counterparts;
- Our university partners (Tufts University and the University of Minnesota) have developed strong relationships with network universities in each region, and they will continue to develop those relationships to ensure sustainable transfer of knowledge, faculty, and best practices in the long term;
- We stand ready to provide support to outbreak response in coordination with, and at the invitation of, our national government partners, and will draw on lessons learned from outbreaks in Year 2 to make this response support as effective and efficient as possible; and
- We coordinate closely with intergovernmental organizations and other EPT Program projects to leverage their work and to supply additional capacity as needed.

In the sections that follow, we detail our plans for Year 3, and provide additional background on the status of ongoing activities.

INTRODUCTION

Infectious diseases of grave concern to human health are emerging from wildlife and livestock populations in regions of the world where boundaries between human, wildlife and livestock populations are undergoing rapid change. This occurs with greater frequency in tropical regions, and these areas often have limited resources for disease prevention and control. Among recent examples, avian influenza may have posed the greatest threat to public health, but increases in monkeypox in the Democratic Republic of Congo, an outbreak of Yellow Fever in Uganda, and Nipah virus outbreaks in Southeast Asia are also of potentially global importance.

Most capacity building efforts to identify, investigate and respond to emerging infectious diseases have focused on supporting public health agencies. However, responding effectively to these diseases requires engagement of and coordination with a diversity of professions and stakeholders in both human and animal health, as well as social and environmental sciences. The frequent lack of coordination among individuals and institutions engaged in human, animal and environmental health is further exacerbated by inequities in funding and support and lack of respect for the contributions certain professions—such as nursing, veterinary medicine and wildlife, among others—make to public health. Outbreak response is likely to be enhanced by a One Health approach where sectors and professions work together to build a stronger and more efficient public health system.

For a One Health philosophy to be firmly embedded in all levels of outbreak response, it is vital that concerted efforts are made to establish and maintain strong linkages between many different disciplines including, but not limited to public health, veterinary medicine, environmental health, the social sciences and others. Moving towards a One Health approach to investigate, respond to, and counter existing and future emerging infectious disease threats is the overarching goal of the EPT Program. This requires commitment at the international, regional, national, and local levels. In the section that follows, we detail RESPOND's objectives, and then explain our strategy for how we will promote and support this commitment and contribute to USAID's EPT Program goal.

RESPOND OBJECTIVES

RESPOND's work is aligned with the four objectives described below and associated activities (the numbers correspond to the RESPOND Workplan). In Year 3, RESPOND will prioritize activities focusing on universities and governments respective roles in building capacity to respond to infectious disease outbreaks and epidemics, and strengthening linkages within and among them. By the end of the project, the One Health networks will become the delivery vehicle for subject matter expertise, training, and capacity building in support of all four RESPOND objectives. Figure 1, below, demonstrates how these objectives contribute to RESPOND's overall goal; the descriptions that follow articulate the types of activities included under each objective.

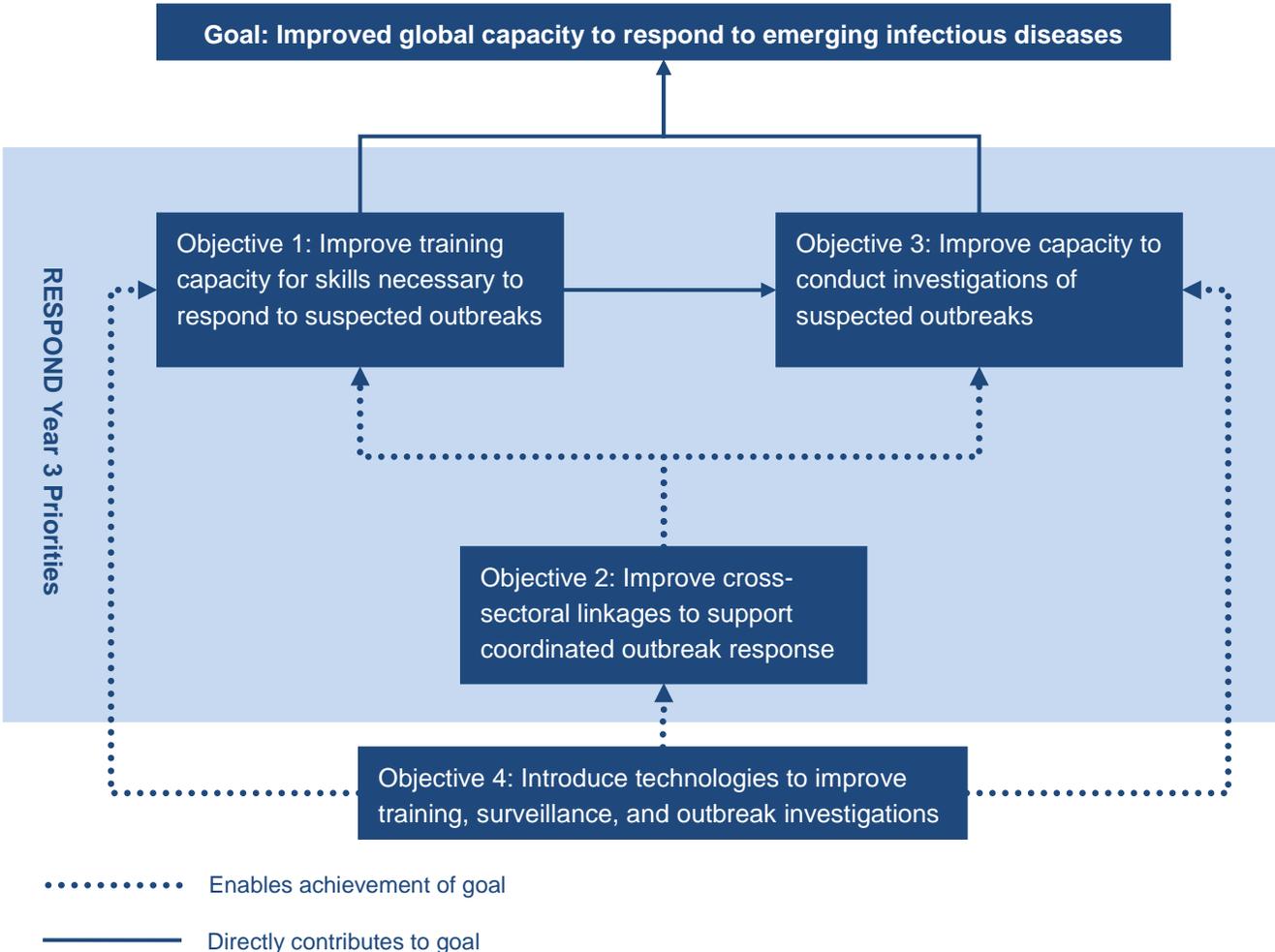


Figure1: RESPOND Objectives

Objective 2 creates an enabling environment for Objectives 1 and 3, which directly support improved global outbreak response capacity. Wherever possible, we will provide assistance in support of Objective 4 through the development and expansion of One Health networks in each region.

OBJECTIVE 1: IMPROVE TRAINING CAPACITY FOR SKILLS NECESSARY TO RESPOND TO SUSPECTED OUTBREAKS.

RESPOND strengthens the educational institutions, curricula, and instructors that deliver graduate degree and professional certificate programs, and improves the career path opportunities for people working in the fields related to emerging pandemic threats.

1.1 Implement skills and knowledge building strategy. This work builds on the RESPOND Skills and Knowledge Building Strategy developed in Year 1, and includes the development of One Health core competencies. Existing curricula are to be inventoried and reviewed, to serve as a basis from which to develop additional materials.

1.2 Implement twinning and mentoring program. Faculty and staff from the schools of public health, veterinary and human medicine, wildlife ecology and management, nursing, education, social anthropology, adult learning specialists, and others collaborate to strengthen the administrative systems and the content and delivery of their curricula.

1.3 Strengthen and enhance ongoing career path development. Existing career paths are reviewed, challenges and gaps identified, and action plans developed to strengthen career path opportunities in hot-spot countries and regions.

1.4 Implement graduate-level degree training. Based on national and regional needs and priorities, existing graduate, undergraduate, and vocational degree programs are strengthened through the development of new and improved courses and content. Existing infrastructure of schools and universities may be enhanced to support improved instruction and learning. Where critical gaps are identified, RESPOND may support the development of new graduate degree programs.

1.5 Implement professional development certificate programs. RESPOND works with the ministries of health, agriculture, wildlife, environment and other ministries to strengthen the professional development of their staff in zoonotic disease outbreak investigation and response. This includes the identification of country-specific needs, curricula development, the selection and training of master trainers, and the design, development and delivery of certificate programs to upgrade the skills of the current generation of professionals involved in outbreak response.

OBJECTIVE 2: IMPROVE CROSS-SECTORAL LINKAGES TO SUPPORT COORDINATED OUTBREAK RESPONSE

RESPOND supports the development of productive working relationships among inter-governmental agencies, government ministries, universities, private sector, and non-governmental institutions required for long-term sustainability of a One Health approach.

2.1 Strengthen and expand relationships between animal and human health organizations.

Working with existing regional bodies and networks, RESPOND convenes multi-sectoral meetings to better understand existing outbreak response systems and barriers to collaboration, and to facilitate opportunities for improvement.

2.2 Implement public-private partnerships to enhance One Health principles and practices.

RESPOND encourages, facilitates, and supports the inclusion of private sector organizations (NGOs, extractive and animal agriculture industries, telecommunication companies, etc.) in outbreak response planning and implementation.

2.3 Implement a Knowledge Management System to facilitate cross-sectoral exchange. RESPOND evaluates existing KMS and their usage, and identifies methods to improve functionality, user access, and usage.

2.4 Encourage professional linkages among One Health collaborators. RESPOND supports exchanges of personnel among institutions and organizations, both within hot-spot regions and between US-based institutions and those in hot-spot regions, through activities such as workshops and conferences.

OBJECTIVE 3: IMPROVE THE CAPACITY TO CONDUCT INVESTIGATIONS OF SUSPECTED OUTBREAKS

RESPOND develops relationships, procedures, and systems to strengthen in-country and transboundary outbreak response systems, provides direct support for outbreak response, and trains community-level first responders.

3.1 Strengthen procedures and systems to improve disease investigation and outbreak response capacity. In collaboration with international health agencies and regional governing bodies, RESPOND supports local and national government authorities, to review existing legal authority for outbreak investigation and response systems, identify logistical and human resource constraints, identify needs for strengthening reporting and responding to outbreaks, and develop plans to improve cross-disciplinary and multi-sectoral coordination and collaboration.

3.2 Support coordination and provision of outbreak response logistics. RESPOND maintains a flexible funding reserve to provide technical, material and logistical support in response to direct requests from national governments and international health agencies, for new outbreaks of potentially zoonotic infectious diseases.

3.3 Strengthen communication systems in surveillance, outbreak investigation and response. RESPOND supports reviews of existing outbreak communication systems at local, national and regional levels, develops recommendations to strengthen systems, and provides technical assistance to improve communication systems.

3.4 Implement outbreak response training at the national, provincial, and district levels. Based on the identification of sub-national hot-spot areas by PREDICT, and verification by national government authorities, RESPOND develops and implements targeted curricula for master trainers, training-of-trainers, and first-responders.

OBJECTIVE 4: INTRODUCE TECHNOLOGIES TO IMPROVE TRAINING, SURVEILLANCE AND OUTBREAK INVESTIGATIONS

RESPOND matches appropriate technology to the field-level needs of those responding to disease outbreaks. While the inclusion of appropriate technology to support disease outbreak response is crucial to more effective and efficient outbreak response, the activities listed below play a supporting role to the other RESPOND objectives as shown in Figure 1. In Year 3, RESPOND will seek a modification to incorporate the activities under this Objective into Objectives 1 and 3.

4.1 Use existing technologies to improve training, surveillance, and outbreak investigations.

Review and analyze the technologies currently used in hot-spot countries, identify gaps, develop recommendations for use of existing appropriate technologies.

4.2 Introduce appropriate new technologies. Based on the results of technology review and analysis, define priority needs for new technology, and provide seed grants to support new technology development.

4.3 Continuous improvement of technologies. RESPOND will strengthen the ability of countries to assess the appropriateness of existing and new technologies for rapid field-level pathogen detection, diagnosis, reporting and control.

LINES OF WORK

To facilitate coordination among the PREDICT, IDENTIFY, RESPOND, and PREVENT projects, USAID organizes the EPT Program under four Lines of Work, namely 1) Wildlife Pathogen Detection, 2) Risk Determination, 3) Outbreak Response Capacity Building, and 4) Risk Reduction. Of these, RESPOND's objectives (as indicated below) fall within Line of Work 3, which consists of the following 2 activities:

3.1 Strengthen human and organizational capacity to improve outbreak response via institutional twinning and mentoring, long-term degree training, short term in-service training, community-level first-responder training and organizational development (RESPOND Objective 1, activities 1.1-1.5; Objective 3, activity 3.4), and;

3.2 Support outbreak response activities by improving planning and preparedness capacity within countries and regions, and supporting the logistical and material needs for outbreak response, including strengthening existing technologies and introducing new technologies for outbreak response (RESPOND Objective 2, activities 2.1-2.4; Objective 3, activities 3.1-3.3; Objective 4, activities 4.1-4.3).

The section that follows highlights specific activities aligned to the Outbreak Response Capacity Building line of work that RESPOND will undertake globally in Year 3.

(Please note that for the following sections presenting narrative descriptions of sub-activities, the term "partners" refers only to organizations that could be considered sub-awardees of the RESPOND project, and does not include collaborating organizations, institutions, or agencies.)

RESPOND IMPLEMENTATION

GLOBAL IMPLEMENTATION STRATEGY

For RESPOND to meet its goals and objectives, we invest in activities that enable multiple disciplines, professions, and the public and private sectors to work together, and empower each to be as competent and resourced as possible to increase the overall strength of the system. This investment is a long-term commitment. We must not only improve outbreak response today, but create a new paradigm for outbreak response that will be realized over the course of the next decade. Therefore, we see a need to sequence RESPOND implementation to ensure that the institutions we build are stable enough to effectively use the resources RESPOND provides. This sequence includes:

- **Year 1: Launch and Outreach:** RESPOND established its project-wide office (Bethesda, MD) and three regional offices (Kinshasa, Democratic Republic of Congo [DRC]; Kampala, Uganda; and Bangkok, Thailand). Senior technical team members and accomplished university subject-matter experts supported the discovery phase, interviewing a wide range of stakeholders, including technical experts, government officials, and a wide range of potential partners. We used the findings of those interviews to carefully plan collaborative activities designed to strengthen outbreak response capacity.
- **Years 2 & 3: Relationship-building, Network Development, and Government Engagement:** The regional offices launched their implementation phase, with a strong focus on engagement with local stakeholders, including governments, universities, and national and regional organizations. In the Congo Basin and Southeast Asia, RESPOND worked closely with local universities to launch One Health networks (One Health Central and Eastern Africa [OHCEA] and One Health Southeast Asia [OHSEA¹]); development of these networks will become the core focus of RESPOND implementation in Year 3. In Year 3, RESPOND will also focus specifically on government engagement, and will work with international organizations such as the World Health Organization (WHO) to improve outbreak response planning and support policy development. We will also work directly with participating governments and universities to develop Country Coordination Committees (CCCs) that support long-term policy advocacy for a One Health approach, and will coordinate closely with governments to improve in-service training for outbreak response.
- **Years 4 & 5: Network Maturation and Policy Formalization:** In Years 4 and 5, RESPOND will continue to run program activities (including some training activities under Objective 3) through the regional University networks (OHCEA and OHSEA). The networks will link closely to, and provide resources for, government-led and RESPOND-supported activities such as in-service district and provincial level outbreak response and wildlife health training and capacity building. With ongoing support and mentorship from RESPOND, the Networks will not only begin to fulfill their intended function from a technical perspective, they will also have the capacity to reach other funding sources and operate independently. RESPOND will also continue government engagement activities, and help governments implement improved outbreak response training and support development of policy. By

¹ The One Health network in Southeast Asia is newly-formed, and does not yet have an official name. For the purposes of this document, we have continued the naming convention used by the One Health network in Africa.

the end of 5 Years, OHCEA and OHSEA will serve as partners to support national governments in outbreak response training and activities.

This work requires engagement with many organizations—locally, nationally, regionally, and internationally—in both remote and urban environments. It also requires working with target audience groups that range from senior government and public health and veterinary staff to community health workers and outbreak first responders. While RESPOND influences a broad range of stakeholders, the intent remains consistent: to collaborate across sectors and disciplines. Our core stakeholders include:

- **National and local governments:** National and local governments have the primary responsibility and legal authority for outbreak response. RESPOND supports and strengthens inter-ministerial task forces and coordinating bodies, and provides technical assistance and training to government staff to improve communication, planning, and wherever possible, integrates a One Health approach to outbreak response into our programming. In Year 3, RESPOND will expand our focus on government engagement to improve coordination, policy development, and governance mechanisms that improve outbreak response.
- **Universities and vocational schools:** Strengthening One Health at educational institutions is a cornerstone of RESPOND’s approach. Tufts University and University of Minnesota schools of public health, medicine, veterinary medicine, and nursing work with regional universities to develop One Health networks. RESPOND improves their capacity to deliver high quality curricula and work with government and international agencies to ensure training is consistent with national, regional and international guidelines and priorities. RESPOND also leverages the reach of educational networks such as the African Field Epidemiology Network (AFENET).
- **Regional and global governing bodies:** Regional authorities such as the African Union (AU) and the Association of Southeast Asian Nations (ASEAN) can drive the development and revision of policies that promote more effective and efficient outbreak investigations and responses to transboundary animal and human diseases. USAID’s leadership role is critically important for RESPOND to strengthen collaboration with these regional organizations, and to work collaboratively with WHO, the United Nations Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), the United States Centers for Disease Control (CDC), The African Union Interagency Bureau for Animal Resources (AU-IBAR), and other regional and global organizations to facilitate policy changes that positively affect the adoption of a One Health approach to outbreak response.
- **Private sector:** Extractive industries such as logging and mining are often at the leading edge of novel interfaces between humans, wildlife, domestic animals, and disturbed environments; in many cases, their engagement in remote areas creates new risk for emerging infectious diseases through disturbance of habitats and wild animal populations. RESPOND is working with PREVENT and PREDICT to develop appropriate best management practice recommendations. RESPOND is also facilitating training within the Ugandan private sector in order to engage the private sector in participation in infectious disease surveillance, outbreak planning, preparation, and response support.
- **Other EPT partners:** RESPOND collaborates with the other EPT projects. For example, RESPOND is actively working with PREVENT and PREDICT in the Extractive Industry Working Group, where we share our collective experience about industry construction and operational practices, and are currently using that information to identify where interventions could occur and developing mitigation measures to minimize or prevent future disease transmission.

REGIONAL IMPLEMENTATION STRATEGIES

Our implementation strategies for each of our two major regions (Central and Eastern Africa and Southeast Asia) are related, but necessarily tailored to country- and region-specific needs and priorities.

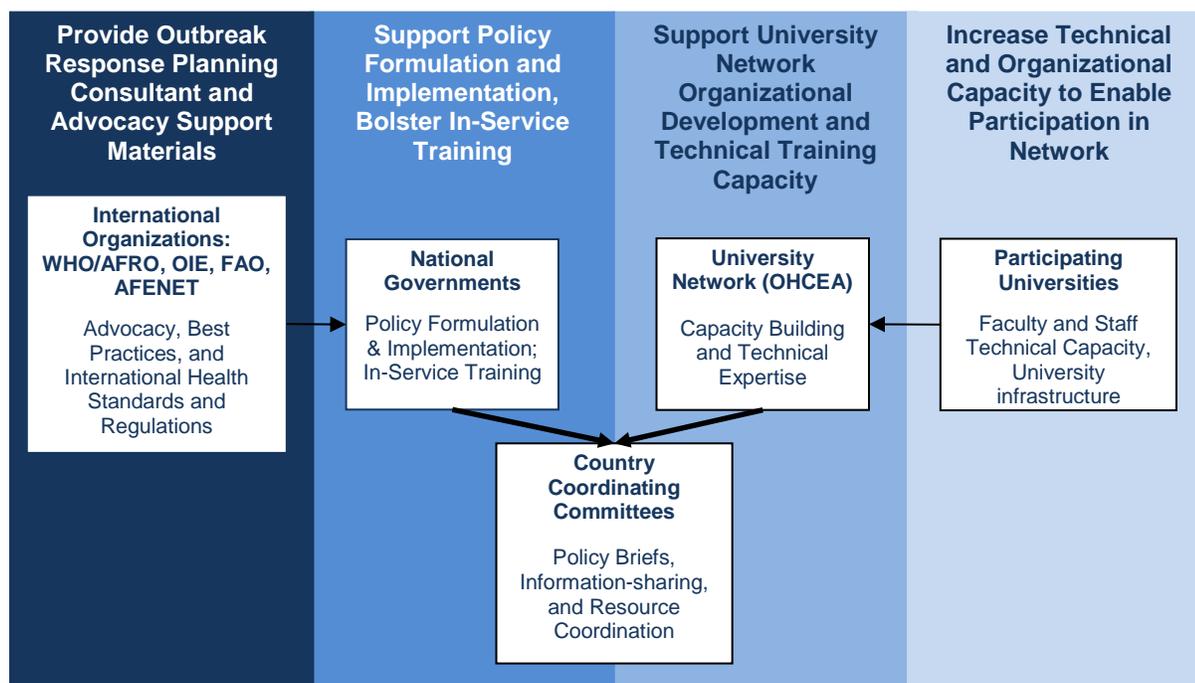
CENTRAL AND EASTERN AFRICA

RESPOND has two offices in the Congo Basin: Kinshasa, DRC, and Kampala, Uganda. These two offices focus on Francophone and Anglophone countries, respectively. Together, their activities reach nine African countries (Uganda, Democratic Republic of Congo, Republic of Congo, Gabon, Tanzania, Ethiopia, Kenya, Rwanda, and Cameroon). RESPOND has two priorities for Africa in Year 3: to continue OHCEA network development and improve engagement with governments in the region to improve the policy frameworks and support for outbreak response. To support OHCEA development, we will take a three-pronged approach: organizational development of the network itself; support to network-run activities; and capacity building to OHCEA member universities, particularly those with lower levels of resources and capacity, to enable better overall network function. To engage with governments, we will take a two-pronged approach: RESPOND will support an outbreak response planning position within WHO's Africa bureau (WHO/AFRO) to reach national governments in the region, and will also engage policymakers and OHCEA university representatives to create the CCCs that will help develop and advocate for improved outbreak response policy frameworks and coordination of capacity building needs. Overall:

- In the short-term, RESPOND will work with government and university network partners to support the formation of the CCCs and jumpstart their activities, and will fund a consultant to review and improve national outbreak response plans for the region in concert with broader efforts at policy-advocacy linked to CCC activities.
- In the medium-term, we will provide training and logistical support to launch the CCCs, which will serve as a bridge between government and academia to improve and better coordinate in-service and pre-service training, and serve as a platform to support strengthened response systems.
- For the long term, we will help OHCEA build its administrative and technical capacity, and transform pre-service and in-service training to create a new model of public health professional who works across disciplines to support implementation of a One Health approach to outbreak response.

Figure 2, below, details the relationships between RESPOND and its African stakeholders.

Figure 2: RESPOND in Central and East Africa



SOUTHEAST ASIA

In Southeast Asia, the region’s dependence on international agricultural trade, coupled with recent coordination around responses to diseases such as avian influenza (H5N1), SARS, and H1N1 influenza (2009) has led to a high level of sophistication in preparation, training, and response to zoonotic disease outbreaks. In contrast to Congo Basin, there is already substantial coordination between governments and universities, with well-developed career linkages between universities, government, and the private sector, particularly in the network countries (Thailand, Vietnam, Malaysia, and Indonesia).

The challenge for RESPOND will be to link the well-developed, government-run field epidemiology training programs (FETPs) and international-caliber university human and animal health and disease programs in the region’s more developed countries with those of the less developed countries. Furthermore, USAID missions in Southeast Asia have successfully invested in zoonotic disease control through avian influenza programming over the past 5 Years; RESPOND seeks to build on, rather than run in parallel to, these existing efforts. The high standards for outbreak response in the region are further bolstered by the private sector; large agribusiness conglomerates, such as Charoen Pokphand (CP) Group, play a major role in propagating international standards throughout their supply chains in the region.

In Year 3, RESPOND’s priority in Southeast Asia will be to continue to support development of OHSEA to improve One Health education at the university level (pre-service training), so that the university graduates who will be the future workforce better understand the cross-disciplinary nature of outbreak response work. We will also collaborate with Universities to support the region’s national governments in outbreak response training as relevant/requested, and leverage the strong coordination between universities, government and private industry.

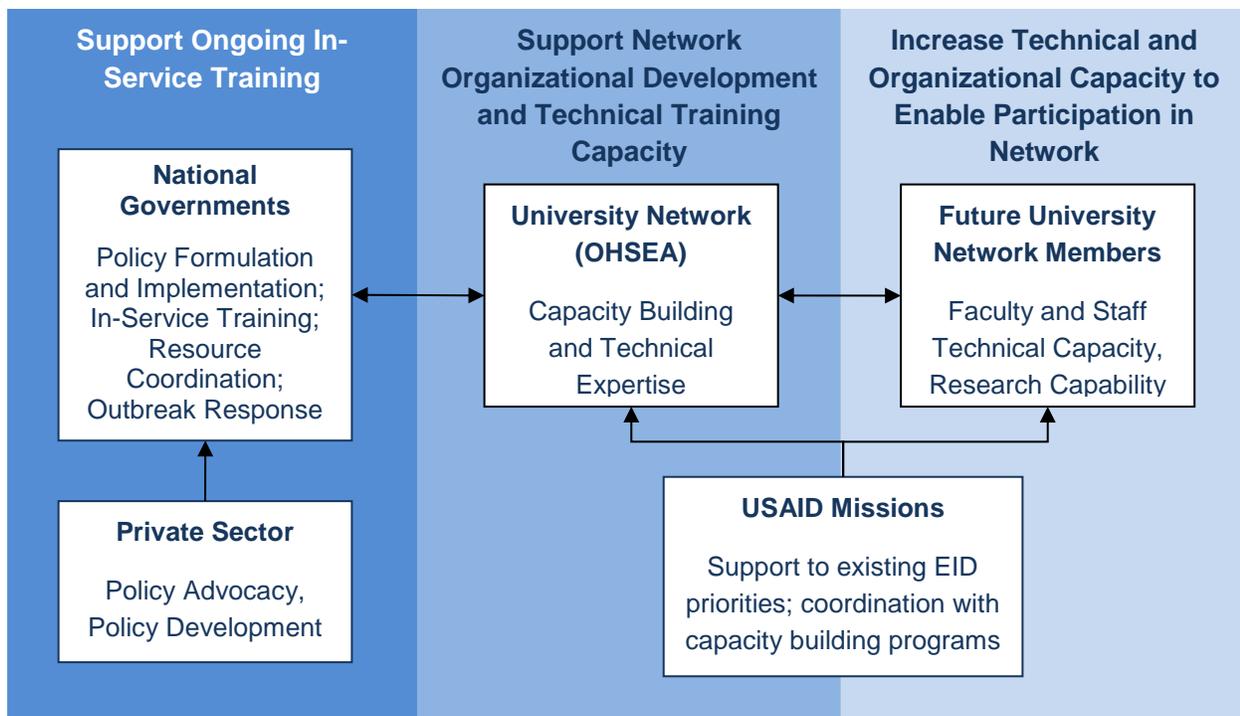
- In the short-term, we will continue to support in-service training with regional and in-country partners, with a particular emphasis on those countries where outbreak response capacity is less

developed (Cambodia, Lao PDR). In all focus countries in the region, we will partner with government to strengthen in-service training and provide technical expertise as needed;

- In the medium term, we will build linkages between universities in Network countries (Thailand, Vietnam, Malaysia, and Indonesia) with universities in Cambodia and Laos to build their capacity and create a path for the latter to join OHSEA;
- Finally, in tandem with our efforts in Africa, we will continue to support development of OHSEA to build its administrative and technical capacity, and eventually improve availability of One Health technical expertise. This will help provide the technical knowledge to support policy implementation and outbreak response capacity building in the long term.

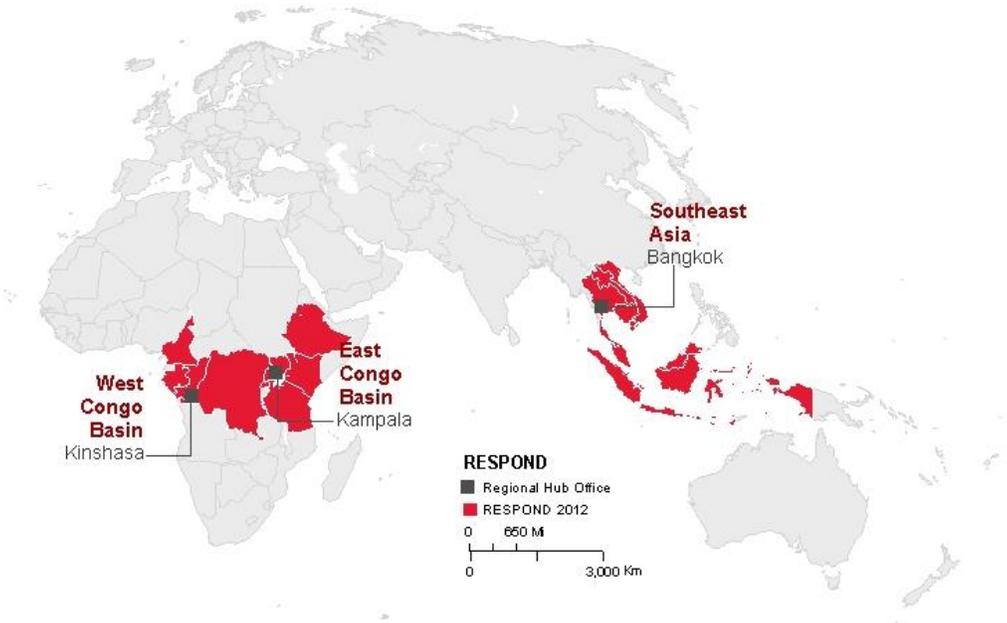
Figure 3, below, details the relationships between RESPOND and its stakeholders in Southeast Asia.

Figure 3: RESPOND in Southeast Asia



Addressing these areas of priority will help USAID’s EPT program deliver its long-term goal of building a more robust global public health system that is better able to respond to emerging pandemic threats. Because each country’s training, infrastructure and disease prevention and control capacity are unique, RESPOND designs country-specific approaches to outbreak response capacity building in close collaboration with government ministries, international health agencies, EPT partners, local universities, and regional university networks (OHCEA, OHSEA), and regional organizations (ASEAN, AU-IBAR). In the sections that follow, we detail those activities that RESPOND will support at a global level, followed by those that each regional office will support at a regional and country level.

GLOBAL VISION



The map above displays three regions (West Congo, East Congo, and Southeast Asia) where RESPOND works currently. RESPOND’s headquarters, in Bethesda, MD, and the locations of our US university partners are not shown on this map.

By 2014, RESPOND will have contributed to a more sustainable human, animal and environmental health infrastructure and outbreak response network in as many as 25 countries. The people and institutions that comprise these systems will be better prepared to promptly identify and report suspected outbreaks of infectious diseases, and to respond collaboratively and effectively using a One Health-consistent approach to outbreaks of emerging or re-emerging infectious diseases, at community, district, national and regional levels.

RESPOND’s project headquarters will implement a discrete set of sub-activities to complement the regional activities run by each Regional Office. In Year 3, global activities will directly support Objectives 1, 2, and 3. Our support for government engagement and coordination at the global level will help create the intellectual framework and policy environment that will enable our regional activities to succeed. Furthermore, the sub-activities in this section:

- Support the continuation of Year 2 priorities;
- Facilitate the sustainability of our regional activities;
- Leverage relationships at a global level;
- Support our sequence of activities project-wide; and
- Maintain flexibility for immediate outbreak response wherever it is needed globally in Year 3.

RESPOND’s Global Year 3 activities support the three core objectives in the following ways:

Objective 1: Under Objective 1, RESPOND will improve training capacity by publishing and sharing One Health core competencies that will enable governments and academic institutions to provide complementary training to their learning constituencies, and promote cross-institutional communication, coordination, and understanding. Further, under Objective 1, we will provide organizational development support to our regional One Health networks. Providing support to this sub-activity at the global level will allow RESPOND to leverage best practices and lessons-learned across regions, provide common frameworks for network development, and improve the potential for cross-network collaboration and learning.

Objective 2: Under Objective 2, RESPOND will engage with the private sector, notably extractive industry, to develop best management practices for outbreak response. Because the private sector is often operating at the “front lines” of disease emergence, yet has limited official coordination with public sector outbreak response, establishing these best practices will improve cross-sectoral coordination and lead to more effective outbreak response.

Objective 3: Under Objective 3, RESPOND will support two sub-activities. The first will support government engagement to improve disease surveillance and response policy frameworks, and will provide governments and intergovernmental organizations the tools to more effectively communicate, advocate, and collaborate around outbreak response. The second sub-activity will directly support outbreak response (such as the Yellow Fever outbreak in Uganda in Year 2) when and where it is needed, consistent with the priorities and at the request of national governments.

The following five sub-activities, while they support the priorities of our regional offices, are considered to be global activities because they:

- Contribute to, and are implemented in partnership with, more than one regional office;
- Provide a base of knowledge that is transferrable across regions;
- Are aligned with RESPOND’s global organizational priorities and relationships; and
- Are managed from RESPOND’s headquarters office in the US.

GLOBAL ACTIVITIES

LOW 3: OUTBREAK RESPONSE CAPACITY BUILDING

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

RESPOND Activity 1.1 (linked to RESPOND Objective 1)

Sub activity 1.1.4 GL: Develop EPT program-wide definition of One Health core competencies—Historically, the core competencies developed by the Public Health Foundation; by the CDC for the domestic Epidemic Intelligence Service (EIS) and international Field Epidemiology Training Programs (iFETPs), by the Council on Linkages between Academic and Public Health Practice, and by the Council of State and Territorial Epidemiologists (CSTE) have focused mainly on human health professionals.

Currently, USAID’s Emerging Pandemic Threats (EPT) program is developing core competencies in One Health, a concept that recognizes that animal and environmental/ecosystem health are critically important components of the public health system. These One Health competencies are essential for the early identification and appropriate response to epidemics or pandemics of emerging infectious pathogens, which often originate among animals, including wildlife. The EPT program also acknowledges the key role of academic institutions and the private sector in identifying the knowledge and skills required by a wide range of professionals if the public health system is to collaborate and function more effectively in the future.

RESPOND is collaborating with USAID, EPT partners, and international health organizations to define One Health core competencies for the EPT program. This activity involves collecting and reviewing existing competencies from various disciplines that combined, form a starting point for One Health capabilities. In Year 2, RESPOND hosted two meetings to discuss and agree upon draft core competencies to inform RESPOND and EPT partner programming. In Year 3, RESPOND will engage regional stakeholders, particularly the University networks, and disseminate the draft competencies to a wide array of subject matter experts and will finalize them based on that input. For example, RESPOND sees a need to integrate wildlife health core competencies into our broader discussion of One Health core competencies. In partnership with PREDICT and PREVENT, we will incorporate these core competencies into the draft One Health core competencies. Once finalized, RESPOND will develop user guides and rubrics to support use of the core competencies; publish the core competencies and user guides; and share them with stakeholders in EPT and RESPOND countries. Finally, RESPOND will work with partners in the One Health University networks to adapt the competencies to the national and cultural contexts.

- **EPT and Other Partners:** no sub-awardees (direct assistance); PREDICT, PREVENT, IDENTIFY
- **Results:** Published EPT One Health core competencies; One Health Core Competency implementation workshops held with network universities and government stakeholders.

Justification for Year 3 Report: The evolution of the One Health interdisciplinary approach presents a challenge to human, animal and environmental health professionals to crystallize what is meant by One Health and address a need for clarity within the EPT context. EPT One Health core competencies will help establish common ground for EPT projects—unifying those interdisciplinary competencies that are essential (core) to effective implementation of the One Health approach across EPT. They will provide direction for programs, guide the development of capacities, help to standardize expectations and establish a common base of criteria for assessment. Year 3 funds for this activity will support the roll-out and promulgation of the Core Competencies.

RESPOND Activity 1.2 (Linked to RESPOND Objective 1)

Sub-Activity 1.2.4 GL: Global Network Organizational Development (New Year 3 Activity). In Year 2 RESPOND supported the establishment of two regional One Health University Networks—one in the Congo Basin (OHCEA) and one in Southeast Asia (OHSEA)—and this work will continue in Year 3. Development of robust university networks—able to effectively and efficiently pursue their programmatic missions—requires attention to the organizational development of the networks as well as to the work they are doing. Issues including network membership, governance and decision

making, management, and communication must be worked through early in the life of the network in order to develop trust and foster collaboration amongst network members

In Year 3 RESPOND will further develop a framework for strengthening network development and activities. While the framework concept will be developed at the global level, implementation will be at the regional level reflecting country-specific perspectives (see sub-activities 1.2.1 SE, 1.2.1 WC, and 1.2.4 EC). Activities will ensure common vision for the network across its members, ensure that governance mechanisms are in place to support and strengthen collaboration within the network and sustain the link with the US-based partner universities.

- **EPT and Other Partners:** n/a (direct assistance)
- **Results:** Network governance framework developed to address roles and responsibilities, decision making, management, communication, etc; network members share a common vision/understanding of the network's role.

Justification for Year 3: The networks will require continued support from RESPOND to develop further in Year 3. The institutions that form the networks will be challenged to overcome historical disciplinary and professional isolation and to establish innovative approaches to planning, modeling and implementing a cross-disciplinary, and a cross-sectoral One Health approach. Support for the networks' organizational development will enable them in turn to support partner institutions as they take on this important work.

RESPOND Activity 3.1 (Linked to RESPOND Objective 3)

Sub-activity 3.1.2 GL: Government innovations supporting integrated disease surveillance and response in human and animal health (New Year 3 Activity). Conducting zoonotic disease surveillance to detect threats to human and animal health that cross political borders and to intervene against those threats requires governance strategies and mechanisms that enable countries to share information and collaborate on responses. For disease surveillance and response systems to be effective, countries must implement and tailor international and global governance approaches within their territories, from the local to the national level and beyond to the international community, through both formal regulation and informal modes of collaboration.

Challenges in coordination at the international and national level will require continued changes in policy and governance. RESPOND will use a number of new and existing relationships in six countries in Central and East Africa to drive a One Health approach to zoonotic disease outbreak response. Given the issues described above, RESPOND will support international agencies (WHO/AFRO, FAO, OIE and AU-IBAR) in their outreach to the governments of DRC, Rwanda, Uganda, Kenya, Ethiopia and Tanzania and promote a One Health Approach to zoonotic outbreaks of disease. In Year 3, RESPOND will fund a series of outreach and advocacy activities between international organizations and host governments, and will place an outbreak response expert in WHO/AFRO to provide technical assistance to work with governments to review and strengthen existing national outbreak response plans and integrate One Health concepts and approaches into existing national response plans. For example, we will host coordinating meetings in East Africa, develop an advocacy package to give a tool to the IOs in their interactions with host governments, and provide funding and logistical support to send regional representatives to the 2011 global WHO/OIE/FAO meeting in Mexico. These activities will help foster One Health approaches in governments' efforts at policy development around infectious diseases.

- **EPT and other partners:** CCCs in Central and East Africa, WHO/AFRO, FAO, OIE, AU-IBAR
- **Results:** An advocacy package that supports an integrated human and animal health approach is developed for each country and in the region; technical officer supports Member States and partners in the region; representatives from six East African countries attend 2011 WHO/OIE/FAO meeting; Policy roadmap developed for creating national One Health policy; Conduct and evaluate national-level outbreak simulations; International Health Regulation (IHR) 2005 is universally understood among sub-activity stakeholders, and adoption thereof is underway.

Justification for Year 3 Support: The drivers of emerging zoonotic diseases are bringing human and animal health ever closer together. This convergence, and the increasingly diverse circumstances in which humans and animals interact across the world, creates the need for more centralized, harmonized, and rationalized governance across multiple sectors within and among countries. One expression of this new understanding of and appreciation for the interconnectedness of humans and animals is the greater collaboration among WHO, FAO, OIE, and AU-IBAR. There remains, however, considerable uncertainty about the mechanisms for this collaboration, the definition of responsibility among the agencies, and their connections to WHO as well as to universities and regional university networks. Convergence in and of itself does not automatically lead to collaboration and integration at national, international, and global governance levels, where fragmentation of sectors continues to present a significant challenge. For national governments, our support will enable them to broaden the coalition of outbreak responders and develop more effective national-level response plans.

LOW 3.2 Support outbreak response activities

RESPOND Activity 2.2 (linked to RESPOND Objective 2)

Sub activity 2.2.1 GL: Develop best management practice recommendations for extractive industries based on PREDICT-identified vectors in hot spot regions. Emergence of zoonotic infectious diseases is due in part to changes in ecosystems and the pattern and frequency of interactions among wildlife, livestock and human populations in tropical and sub-tropical regions. These interactions are enhanced by industries such as logging, onshore oil and gas exploration and extraction, and mining in previously remote areas; as well as by expanding human populations, and associated hunting, agriculture, eco-tourism and other activities resulting in increased exposure(s) to pathogens with epidemic or pandemic potential. Working through the Extractive Industry Working Group (which includes PREVENT and PREDICT), RESPOND will help to identify and implement measures that could decrease the potential for disease emergence in areas around extractive sites. Once recommendations are identified, best management practices will be discussed in a variety of regional and global forums, including presentations at regional and international extractive industry conferences. This activity will be piloted in Gabon and possibly Uganda, and, based on the outcome of that pilot, rolled out in other regions.

- **EPT and other partners:** PREVENT, PREDICT, World Wildlife Fund (WWF), others TBD.
- **Results:** Best management practices (BMPs) for health or disease prevention developed for and communicated to regional extractive industry companies and organizations.

Justification for Year 3 Support: PREDICT developed a preliminary version of an extractive industry risk assessment tool, and RESPOND provided technical input to further simplify and refine the tool. This has helped better direct the EIWG to identify those areas of zoonotic disease transmission risk. Continuation of this activity in Year 3 will enable the EPT program to complete the tool and share it widely with the private sector and other stakeholders.

RESPOND Activity 3.2 (linked to RESPOND Objective 3)

Sub-activity 3.2.0 GL: Outbreak response support. The majority of emerging infectious diseases causing epidemics and pandemics among humans in recent decades (for example, HIV, Ebola, Nipah virus, avian influenza, and influenza H1N1[2009]) originated in wildlife or livestock, often in tropical regions. Developing a cohesive multi-disciplinary, One Health approach to disease outbreak investigation and response lies at the center of RESPOND's strategy and addresses issues more complex than one organization or discipline can manage alone.

At the request of host-country governments and international health agencies with legal authority for outbreak response, RESPOND will provide technical, logistical, and material support to facilitate and improve outbreak response. This can include support for subject-matter experts to consult or participate, provision of logistics (supplies, personal protective equipment [PPE], vehicles or fuel to transport outbreak investigation or response teams), rapid refresher training (for example, using training materials developed by PREDICT, such as proper use of PPE; safe collection, shipment and processing of samples from humans and animals with suspected illness). This support will be provided on a case-by-case basis, and available to countries within the EPT hot-spot regions. In Year 2, outbreak response funds were used by the RESPOND East Congo Basin office to:

- Provide technical and logistical support to the Ugandan National Disease Outbreak Task Force during the outbreak of anthrax among wildlife in the Queen Elizabeth National Park;
- Support the provision of PPE and deployment of technical experts from AFENET to collaborate with the National Task Force and CDC Uganda to investigate the outbreak of suspected human viral hemorrhagic fever [confirmed in November 2010 to be yellow fever];
- Support the training of a Ugandan laboratorian at CDC Fort Collins providing capacity to Uganda for in-country testing of yellow fever specimens from persons with suspected viral hemorrhagic fever at the Uganda Viral Research Institute (UVRI);
- Place qualified laboratorians at UVRI and National Animal Disease Diagnostic and Epidemiology Centre (NADDEC), as well as an experienced field epidemiologist in the National Task Force, to both strengthen and coordinate outbreak response capacity during actual outbreaks, and enhance in-service training of district staff; and
- Initiate an applied epidemiology Masters Degree program at Makerere College of Veterinary Medicine to enhance response capacity in the animal health sector.

In Year 3, RESPOND will continue to provide support at the request of host country governments throughout our focus regions, in cooperation with international health agencies.

- **EPT and Other Partners:** Direct assistance; funding recipients TBD.
- **Results:** Training, technical, logistical, material and communications support provided to address identified gaps; improved efficiency and efficacy of outbreak response.

Justification for Year 3 Support: Multiple emerging infectious disease outbreaks will be recognized in the coming year, including potentially infectious agents not previously identified that could pose a risk to public health in countries, regions and globally. Increased training in outbreak response and disease surveillance increases the likelihood that previously unrecognized outbreaks and epidemics will be reported and brought to the attention of national authorities, resulting in an increased need for response coordination, use of resources and management of appropriate field investigations and prevention and control measures consistent with One Health.

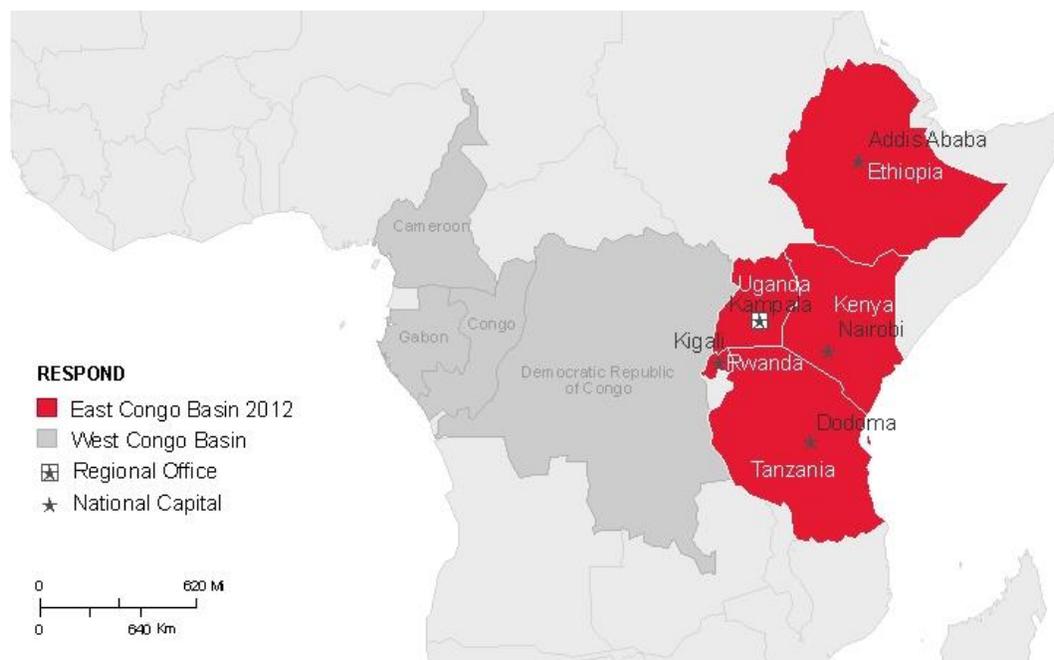
Sub activity 3.3.1 GL: ProMED Mail: Expanding surveillance and verification for wildlife diseases—ProMED Mail, the Program for Monitoring Emerging Diseases (PMM), is a web-based reporting system dedicated to early dissemination of information about disease outbreaks in humans, animals and plants. PMM is based on a network of moderators (human and animal health specialists stationed around the world) who scan local information sources—including media reports, official reports, online summaries, and others—verify them and post them to the PMM website with additional commentary (www.promedmail.org). PMM is an official program of the International Society for Infectious Diseases (ISID). More than 50,000 people subscribe to PMM globally. PMM is also working across EPT—in particular with PREDICT—to incorporate more wildlife specialists and adapt PMM for mobile devices such as phones.

In Year 2, PMM staff provided a short-term training on ProMED Mail use at the 6th TEPHINET Global Scientific Conference, and an intermediate term training to Field Epidemiology Training Program – Veterinary (FETP-V) Fellows in Bangkok. In Year 3, PMM will coordinate with planned RESPOND regional training events to provide short, intermediate, or long-term trainings to the appropriate target audiences; for example, ProMED Mail may contribute to the following: the Asia-Pacific Academic Consortium for Public Health (APACPH)/EcoHealth meeting in Bangkok, MS training at Makerere University College of Veterinary Medicine (CVM) for the East Congo Basin, and Wildlife Investigation and Livestock Disease (WILD) training in the West Congo Basin.

- **EPT and Other Partners:** ProMED Mail, other sub-awardees TBD
- **Results:** Increased awareness of available informal reporting sources; increased number of ‘reporters’; increased use of wildlife health information to protect and improve public health.

Justification for Year 3 Support: Electronic communications enable ProMED Mail to provide up-to-date and reliable news about threats to human, animal, and crop health around the world, seven days a week. Support to ProMed Mail will allow RESPOND staff to monitor changes in length of time between the first report of a disease outbreak by ProMED mail sources, verification of the report, and response within and between RESPOND regions where responses actually occur; identify the reach of ProMED-mail postings by measuring subscription rates among animal and human health professionals in RESPOND regions; and monitor and summarize the number and sources of ProMED-mail postings in hot spot areas over time and by animal and human health professionals.

REGIONAL VISION—EAST CONGO BASIN



The map above of the East Congo Basin shows where RESPOND currently works, and its relationship with the West Congo Basin office.

Due in part to substantial investments by USAID, CDC and other international health agencies, there is a strong foundation of existing academic institutions and regional networks for disease response in East Africa. RESPOND plans to capitalize on this opportunity by further strengthening that foundation and increasing the effectiveness of regional academic and public health networks to respond effectively to emerging infectious diseases. RESPOND will achieve this through strategic efforts to deepen and broaden existing collaborations beyond public health and veterinary medicine to include other sectors and disciplines including wildlife management, ecology, nursing and the private sector.

The RESPOND East Congo Basin and West Congo Basin offices together support activities throughout the Congo Basin region. In Year 3, the East Congo Basin office will take the lead on strengthening and supporting the One Health Central and East Africa network, support regional organizations such as AFENET to improve One Health training and outbreak response, and will continue to support outbreak response activities in Uganda. In keeping with the overall global strategy, the East Congo Basin office will prioritize activities under Objectives 1 and 3. As shown in our discussion of RESPOND’s objectives, Objective 2 (GL) activities implemented through the RESPOND Office Headquarters will support EC implementation of sub-activities under Objectives 1 and 3:

Objective 1: Improve training capacity for skills necessary to respond to suspected outbreaks. The primary focus of activities under this objective is the development of the OHCEA network. OHCEA is a regional network composed of schools of public health and schools of veterinary medicine from six countries (Democratic Republic of Congo, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda). OHCEA was created in an effort to integrate multidisciplinary approaches and One Health concepts into

educational institutions in EPT focus regions. RESPOND supported the formation of OHCEA in October 2010, and helped OHCEA institutions carry out baseline assessments in each of the six countries. OHCEA drafted a 10-year strategic plan with support from RESPOND; deans from the 14 member institutions approved it at a deans' summit held in May 2011 in Kinshasa, DRC. The One Health concept was officially launched in Uganda, Kenya, and DRC in Years 1 and 2. While OHCEA spans East and Central Africa, RESPOND's East Congo Basin office will take the lead on network development activities.

Through OHCEA, RESPOND builds One Health capacity within professions and creates opportunity for collaborations and programs that cut across professions and sectors to address regional health challenges, particularly in the context of disease outbreak investigation and response. RESPOND works with OHCEA network universities to develop a new generation of One Health leaders from many professions (e.g. public health, nursing, veterinary medicine, human medicine, environmental sciences) who have the tools to work together to transform public health systems.

Also under Objective 1, RESPOND will support the development of the Country Coordinating Committees (CCCs), which will play a bridging role for outbreak response and capacity building to promote information and knowledge exchange and integrate One Health approaches into curricula, training, and policy. In the longer term, CCCs will be supported to develop policy briefs (e.g. white papers) and provide a mechanism for better-coordinated, more informed disease outbreak response through incorporation of One Health concepts and methodologies.

Objective 3: Improve the capacity to conduct investigations of suspected outbreaks. RESPOND contributes technical, material, logistical and managerial support for strengthened disease outbreak investigation and response, and also supports line ministry efforts and international health regulatory authorities (e.g. WHO) in building outbreak investigation and response capacity.

RESPOND will identify training needs and train provincial and district human and animal health providers to improve outbreak identification, reporting, and response. RESPOND works closely with AFENET, a strategic partner in the region, to coordinate and address some of these training needs. AFENET works to strengthen field epidemiology capacity, enhance public health laboratory capacity, strengthen surveillance systems for priority communicable and non-communicable diseases and advance the sharing of regional expertise in field epidemiology and laboratory capacity in Africa. Combined RESPOND and AFENET efforts under this objective involve collaboration with PREDICT, IDENTIFY and PREVENT, conservation and wildlife NGOs, and other partners such as CDC, WHO, OIE, and FAO.

The ECB RESPOND strategy in Y3 will put stronger emphasis on supporting government advocacy for integrating One Health concepts and approaches into health policies, as well as increased collaboration with international health agencies in the region. Supporting and leading in-service training activities such as the WHO curriculum on Epidemic Preparedness and Control and 2010 Integrated Disease Surveillance and Response (IDSR) guidelines will promote inter-government and inter-agency collaboration, while expanding the target audience of health professionals, effectively promoting the capacity to implement more robust disease surveillance and response systems.

The section that follows highlights specific activities aligned to the Outbreak Response Capacity Building line of work that RESPOND will undertake throughout the East Congo Basin.

REGIONAL ACTIVITIES—EAST CONGO BASIN

LOW 3: OUTBREAK RESPONSE CAPACITY BUILDING

Sub-activities described in this section are not repeated again in the section for their respective countries, since they are considered regional sub-activities, not country-specific sub-activities, for purposes of this workplan. For some of these regional sub-activities, countries for implementation are specified below and the sub-activity titles are listed in the country sections for ease of reference. For others, greater detail about countries for implementation will be developed in the coming months.

LOW 3.1: Strengthen human and organizational capacity to improve outbreak response

Activity 1.2 (Linked to RESPOND Objective 1)

Sub-activity 1.2.3 EC: OHCEA August 2011 - September 2012 (Year 2 & 3) Workplan. Through this sub-activity, RESPOND will strengthen OHCEA in terms of leadership, governance, technical assistance and information-sharing across countries to integrate and adopt One Health concepts; help OHCEA develop and deliver competency-based pre-service and in-service education, training and outreach to expand the size and capabilities of the government workforce in areas related to zoonotic disease surveillance and response; engage faculty at OHCEA institutions to conduct cross-disciplinary experiential learning/training for both students and faculty. RESPOND will also provide support to OHCEA to produce innovations, generate data and evidence and share information to advance training, science and practice, and to help integrate One Health and multi-disciplinary approaches to complex health issues into policy frameworks; and support faculty exchange within OHCEA and between OHCEA and US university partners. These actions will help OHCEA transform member universities so that they are able to deliver competency-based, pre-service, and in-service training consistent with anticipated needs of the public health workforce in 2020 in compliance with national guidelines for continuing professional development accreditation for health professionals.

In Year 2, OHCEA led efforts to establish and or identify existing CCCs in the region. In Year 3, RESPOND will organize CCC development and issue a sub-award for OHCEA that enables them to fund the implementation of the CCCs. As this activity progresses and the CCCs mature, RESPOND will review funding mechanisms to identify more sustainable ways to keep them running. A challenge in the medium-term will be to ensure that the ownership of the CCCs is balanced between OHCEA and government to ensure that they play a constructive, neutral role at a national level.

- **EPT and Other Partners:** OHCEA universities
- **Results:** OHCEA has reviewed and developed relevant curricula for pre-service and in-service training; Field pathology course module developed for East & West Africa, including distance learning version; OHCEA institutions have conducted cross-disciplinary student field experiential trainings; government and intergovernmental organization engagement to advocate for One Health; the One Health concept will have been officially launched in 3 countries (Ethiopia, Rwanda and Tanzania); more schools (e.g., nursing, wildlife, environment) will have been added to the OHCEA network; and more faculty and students will be involved in activities of OHCEA.

Justification for Year 3 Support: The OHCEA partnership began by fostering a strong relationship between schools of public health and schools of veterinary medicine and later will evolve to include other related disciplines (including nursing, wildlife and agriculture). In Year 3, this relationship will

be operationalized through: curriculum and program strengthening and development, collaboration and faculty exchange. There is need to build a common understanding of One Health concepts and approaches within OHCEA through workshops held throughout the region. This will also provide an opportunity for stakeholders to collaboratively learn, define and develop the principles of One Health.

Sub-Activity 1.2.4 EC: OHCEA Network Development. (NOTE: in Year 2, this sub activity was numbered 1.2.2 EC and has been split into 1.2.4 EC and 1.2.4 GL) This sub-activity will work in tandem with 1.2.4 GL, which will focus on overall network organizational development. This sub-activity will support the coordination, linkages, and capacity development needs among the universities that make up the OHCEA network specifically.

OHCEA is a new partnership aimed at providing a conceptual home for One Health activities in the region, through a network of 14 schools from six countries throughout the Congo Basin. The first step in achieving this vision is to foster strong relationships between schools of public health and schools of veterinary medicine with the vision to expand the network to additional schools and disciplines including nursing, wildlife and agriculture. This is a large endeavor and one that must be founded with a sound governance structure and management. At the commencement of Year 3, in coordination with 1.2.4 GL, RESPOND will compliment technical support to OHCEA activities with direct engagement with the OHCEA Secretariat and Co-Chairs to develop a sound, functional governance structure to assure the success of the network and the tools required for sound management of the expansion of OHCEA to include additional schools and activities.

- **EPT and Other Partners:** OHCEA
- **Results:** OHCEA has an established and functional governance structure, with ratified operations policies and manual, communications policies and plan, and national communication strategies; Secretariat and member capacity developed and strengthened to manage the network; plan created for the development of the One Health professional IT capabilities assessed, institutional quality assurance and One Health sensitization workshops implemented, ; mentoring program developed, membership expansion advocated, and gender equality concepts promoted.

Justification for Year 3 Support: The establishment of a network spanning six countries and engaging 14 schools, with a plan for expansion, creates the need for sound governing policies, procedures and structure. In addition to the networking and twinning at a technical level between OHCEA members and the University of Minnesota and Tufts University, RESPOND will focus in Year 3 on ensuring that OHCEA is endowed with a sound governing policies, procedures and tools to assure effective management to implement RESPOND activities and to expand.

Sub-Activity 1.2.5 EC: OHCEA Innovation Partnerships (New Year 3 Activity). RESPOND’s approach to network development has three key components: network establishment and initiation to move from concept to activity within the network (sub-activity 1.2.3 EC); organizational development to create sustainable systems and partnerships (sub-activity 1.2.4 GL and 1.2.4 EC); and OHCEA Innovation Partnerships that support collaboration among network universities and schools as models for One Health activities.

Through this sub-activity, RESPOND addresses that third component. The RESPOND university partners and OHCEA member universities will work together to identify novel programs and or ideas for programs that can be developed and expanded to operationalize One Health approaches and

concepts. To achieve this, RESPOND partner universities will work directly with OHCEA schools in each country to foster communication and collaboration across and between the human and animal health schools, identify innovative programs at each school, and share innovative models from across OHCEA and around the globe. Based on these discussions, a RESPOND grant committee will identify high priority partnerships that can be advanced through targeted funding in Year 3.

- **EPT and Other Partners:** OHCEA member universities TBD
- **Results:** Innovative pilot programs identified, with two being developed and evaluated; network university partnerships/linkages strengthened; linkages among OHCEA network universities improved; increased understanding of, and hands-on experience with One Health concepts and approaches; and successful activities that can be replicated across the region.

Justification for Year 3 Support: Innovative Partnerships help advance the OHCEA network through a combination of modeling One Health innovation and work for the network, fostering the cross-network partnerships and collaboration at the institution level and faculty level that are essential to network sustainability, and seeding the formation of innovative new programs that can then form the foundation for seeking further funding and providing longer-term sustainability beyond RESPOND.

COUNTRY ACTIVITIES—UGANDA

LOW 3.1: Strengthen human and organizational capacity to improve outbreak response

Activity 1.5 (Linked to RESPOND Objective 1)

Sub-Activity 1.5.4 EC: Residency-based knowledge partnership model for building veterinary public health competence in Uganda. (New Year 3 Activity) Through a combination of direct assistance and a grant to Makerere University, RESPOND will help develop a residency-based program in veterinary public health (VPH) at Makerere University CVM. Using best practices and techniques from a unique VPH residency program at the University of Minnesota, the Makerere CVM is interested in adapting a similar residency program as a means of strengthening its programs to become a leading institution in meeting regional workforce needs for applied problem solving in public health, zoonotic disease, food security and development. Modeled on a clinical residency, a VPH resident will spend 75% of their time working on practical problems in VPH through paid partnerships with industry, government and academia, the remaining 25% of their time will be spent in traditional learning environments earning a degree. In addition to building on the VPH residency, this program will also review and integrate key components of the Tufts Masters of Conservation Medicine and the pilot modified Masters of Preventative Medicine at Makerere University. This program will address a critical need for applied practical training to Ugandan veterinarians in these areas to succeed in this new mandate. Generally in East and Central Africa, the veterinary portion of the One Health framework is still underdeveloped and under resourced.

Residents will be trained in a variety of applied learning opportunities directed towards developing skill sets and critical competencies including; food safety and security, environmental health, infectious diseases, epidemiology (including wildlife epidemiology), participatory disease surveillance, One Health approaches and health policy and administration. A Ugandan coordinator of the new program will be sent to UMN for 2 months to learn the administrative structure and become

familiar with the residency model, with the aim to adapt the program for Uganda and East Africa context. RESPOND will hold a stakeholders meeting to introduce potential local partners and Makerere University faculty members to the strengths and benefits of the program. A faculty member from Makerere CVM will be designated as program mentor and participate in the UMN residency as a mentor in training. Throughout Year 3, a bi-directional faculty, student and staff exchange will be used to enhance the capacity at Makerere to adapt and implement the residency program and to adapt the Minnesota residency to meet workforce and funding constraints in Uganda. Once the program is successfully running, the program coordinator and advisors at Makerere will assist another veterinary school in the region to develop a similar program.

- **EPT and Other Partners:** Makerere University
- **Results:** Faculty (1) and student (1) from Makerere trained at UMN; residency program in veterinary public health is established at Makerere; faculty/student exchanges and mentorship occur between Makerere and UMN.

Justification for Year 3 Support: This program addresses a critical need to provide applied practical training to Ugandan veterinarians delivering unique skill sets in the area of One Health and developing capacities and competencies in critical areas. This pilot program leverages UMN’s 10 years of experience in successfully developing and sustaining their veterinary public health residency, building upon that existing program to ensure strong early successes, while at the same time advancing new programs as quickly as possible where they are required. Partnership with the existing, sustainable, UMN program will more likely result in long-term sustainability for the program.

LOW 3.2: Support outbreak response activities

Activity 3.2 (Linked to RESPOND Objective 3)

Sub-activity 3.2.0.4 EC: Strengthening Surveillance, Reporting & Diagnostic Capacity to Improve Early Detection, Diagnosis & Response to Disease Outbreaks in Humans, Livestock, and Wildlife. As of mid-August 2011 RESPOND’s East Congo office has been involved in three disease outbreak responses in Uganda; Anthrax affecting wildlife species in Queen Elizabeth National Park; a “strange disease” in humans which was eventually identified as yellow fever in Northern Uganda; and a confirmed fatal human Ebola case in close proximity to Kampala. Critical challenges shared across all these outbreaks included: a lack of capacity for rapid detection and diagnosis of the etiologic agents; poor communication and coordination between and across government ministries, intergovernmental agencies and development partners involved in outbreak investigation and response; and absent infrastructure and logistical support to provide technical expertise and critical supplies to areas affected by these outbreaks. These challenges all reflect little to no preparedness or capacity to investigate and respond to disease outbreaks in a coordinated, efficient manner.

Through this sub-activity RESPOND will support Ugandan government efforts to improve outbreak response in three ways: training of national and district-level outbreak rapid response teams; seed funding for three outbreak response positions supporting Uganda Ministry of Health (MoH) and Ministry of Agriculture, Animal Industries, and Fisheries (MAAIF); and supporting the enrollment of

five MAAIF veterinarians in a modified Masters in Veterinary Preventive Medicine at Makerere University College of Veterinary Medicine. This “applied” Masters program will be unique in Uganda and the region with a focus on applied learning, mentoring and service delivery to meet a critical need of the Uganda MAAIF to address zoonotic disease issues. Concentration areas, skills sets and competencies for the program will include One Health approaches to disease surveillance, field investigations, applied epidemiology training, data analysis and interpretation, and outbreak response.

- **EPT and Other Partners:** Makerere University, AFENET, IDENTIFY, PREDICT.
- **Results:** Five veterinarians initially supported for training in field-focused modified MS in Veterinary Preventive Medicine (public health); district-level outbreak response team training (30 trainees); One Health Technical Advisor and Laboratory Field Epidemiology Advisor staffed in government.

Justification for Year 3 Support: The resources provided through this sub-activity support the Uganda government’s capacity to identify and respond to infectious disease outbreaks of known and unknown etiology. This sub-activity provided the initial funds to kick start the applied masters program at Makerere CVM, which will continue to be supported through 3.2.2EC via an additional grant to AFENET. Positions within the ministries are targeted capacity-building within existing outbreak investigation and response frameworks (including at National Task force level), and directly address the major gaps listed above; they represent long-term support, and are intended to provide a “lead-by-example” model for how coordination between and across government ministries, intergovernmental organizations and development partners improves the capacity and addressing critical to address the complex challenges faced during disease outbreaks. This sub-activity provides solutions to the uncertainty, ambiguity, and lack of information inherent in outbreak situations.

Sub-activity 3.2.0.5 EC: Private Sector Outbreak Response Training. The private sector in Uganda represents an important and untapped resource to support MAAIF and Uganda Wildlife Authority disease surveillance and outbreak response system. The peer educator system used by the Federation of Uganda Employers (FUE) and Uganda Manufacturers Association (UMA) currently plays an important communication role in companies and communities. The peer educator system can be used to broaden the reach of the current health information systems about disease outbreaks, educate Ugandans about the IDSR reportable diseases, help them recognize unusual illnesses, understand what the risks are, and let others know what they should do to plan for and assist in responding to disease outbreaks

Through this sub-activity, RESPOND will build the capacity of UMA’s and FUE’s health master trainers to deliver disease surveillance and outbreak response support training, and teach peer educators how they can participate in disease surveillance and outbreak response. The peer educators will then teach their peers about IDSR-reportable diseases, how to make referrals to health professionals, and how to recognize unusual disease events and report them. This network of professionals will also support health professionals working in industry on-site clinics as needed to plan for and respond to outbreaks. Overall, this sub-activity will broaden the support network for Uganda’s existing disease surveillance and outbreak response system by including the private sector and its resources.

- **EPT and Other Partners:** UMA, FUE

- **Results:** Needs assessment conducted for master trainers and peer educators. Disease surveillance and outbreak response training and training-of-trainers curriculum and related materials for private sector developed. 20 Master Trainers from FUE and UMA trained to be able to implement the Peer Educator Training on disease outbreak surveillance and response for private industry. 200 Peer Educators trained from 10 companies to promote improved awareness, prevention, surveillance and reporting of diseases that may lead to outbreaks in Uganda. Peer educators expected to each reach approximately 25 co-workers for an estimated population outreach of 5,000. Evaluation of pilot program to determine potential expansion opportunities.

Justification for Year 3 Support: This private sector training sub-activity commenced in Year 2, with the key training components occurring in Year 3. These include the Training of the Master Trainers, the implementation of the Peer Educator trainings at ten companies, and the evaluation of the pilot program for potential expansion to other companies. Based on the country assessments conducted by OHCEA, health professionals working in private sector clinics and hospitals lack training in disease outbreak response. Based on the outcome and impact of the training in Uganda, other countries and private sector industries in the region may also benefit from similar training.

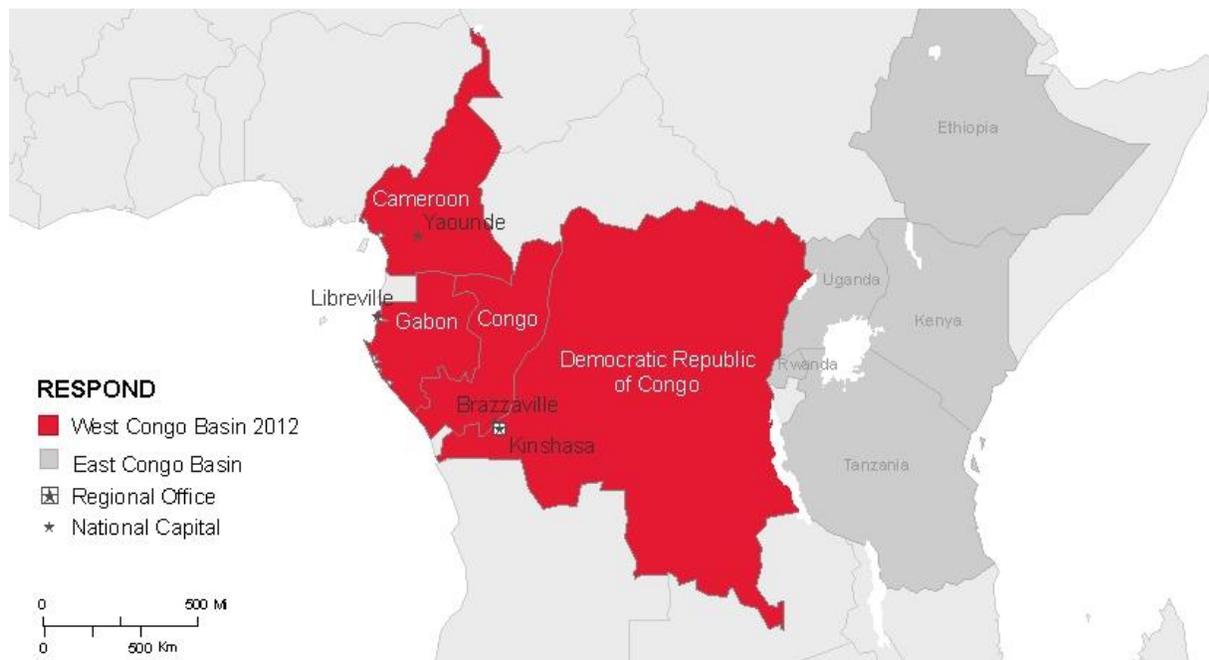
Sub-activity 3.2.2 EC: Strengthening existing platforms for outbreak response in Uganda.

Through this sub-activity, RESPOND will help build AFENET’s capacity to deliver training, develop, manage and evaluate programs, and mentor junior staff. Specifically, RESPOND will provide financial and technical assistance for AFENET to complete a manual on participatory epidemiology and conduct associated refresher trainings with public health professionals; support training on, and implementation of, monitoring and evaluation approaches, with an emphasis on methods that assess the impact of their programs on communities (such as Participatory Impact Assessment). RESPOND will also provide training and organizational development assistance to enhance project management, communication and mentoring skills of the AFENET Secretariat staff, and provide support for a cohort of five MAAIF veterinarians in an applied masters program at Makerere University’s College of Veterinary Medicine (initiated with funding to AFENET from sub-activity 3.2.0.4 EC).

- **EPT and Other Partners:** AFENET
- **Results:** A finalized and piloted version of the PE manual available for use; 20 AFENET professionals trained and competent in PE, AFENET administrative and technical personnel competent in M&E and able to support capacity building among AFENET professionals in member countries; standardized tools to monitor the impact of AFENET’s inputs into public health capacity building developed, tested and available for use; AFENET administrative staff with increased management and mentoring skills; and five MAAIF veterinarians with unique skill sets and competencies in outbreak investigation and response conclude training (started in sub-activity 3.2.0.4EC.)

Justification for Year 3 Support: AFENET serves as a major resource to government ministries and other public health institutions in member countries by contributing to the enhancement of applied epidemiology training and workforce development. This sub-activity will strengthen AFENET’s internal capacity to train, manage, conduct and evaluate effective outbreak response in support of national/district level public health systems coordinated by MoH and MAAIF.

REGIONAL VISION – WEST CONGO BASIN



The map above of the West Congo Basin shows where RESPOND currently works, and its relationship with the East Congo Basin office.

As noted in our regional strategy section, RESPOND’s West Congo Basin and East Congo Basin office implement RESPOND’s activities across the region. Despite geographic proximity, however, the focus, capacities, and priorities of the stakeholders with which we work in Central and East Africa are often quite different and can even be antagonistic.

As the host of the West Congo Basin (WCB) office, DRC poses some significant and unique challenges that require close attention. Because DRC has a limited history of scientific or technical collaboration with most countries in the region, few regional, transboundary health networks exist, initiatives may not always be undertaken in a collaborative manner, and human capacity to respond to outbreaks remains suboptimal and localized. Within individual countries, cross-disciplinary epidemiological surveillance is almost non-existent. In the DRC, sectors involved in human, domestic animal and wild animal health have separate organizational structures and administrative units from the central to the local level. In addition, poor infrastructure and communication systems handicap interventions targeting most critical and remote zones. Furthermore, although DRC is considered a post-conflict country, several provinces still suffer from ongoing armed conflict, resulting in internal and transboundary displacements of people, including movements between DRC and bordering countries such as Uganda and the Republic of Congo. These unstable conditions may negatively affect RESPOND’s ability to reach vulnerable populations and communities in these more remote areas.

In the case of university networks, these political and resource divides between East and Central Africa have made full inclusion of Central African institutions into East Africa-based networks challenging. We

recognize the cultural and linguistic divides that currently inhibit participation by DRC and its neighbors in what is perceived by some to be an East African-led OHCEA network. This was the case with Health Alliance, the network of schools of public health upon which OHCEA was built, and, with no specific intervention, it will also be the case with OHCEA. Because of these differences, a key priority for RESPOND in Year 3 will be for RESPOND's two offices to jointly, coherently support OHCEA development through activities 1.2.4EC, 1.2.5 EC and 1.2.1 WC in a way that builds equity and true partnership across the network. To encourage collaboration across the region, RESPOND will support innovation grants (see sub-activity 1.2.5 EC) and twinning opportunities for Congolese universities that participate in OHCEA. RESPOND will also take advantage of some specific opportunities to pilot activities in other countries in the region, such as Cameroon and Gabon. Wherever possible, we will learn from these pilot activities and expand them across the region.

In Year 3, the West Congo Basin office will continue to focus its resources on Objectives 1, 3, and 4, with principles from Objective 2 supporting all objectives, as described below.

Objective 1: Improve training capacity for skills necessary to respond to suspected outbreaks.

RESPOND's WCB office will support regional network development by focusing on the specific capacity gaps in DRC with particular attention to professional and vocational health training programs. Based on activities conducted in Year 2, three challenges have become apparent: first, demand for a revised curriculum is high and the populations of students are large. Second, although this population is typically the most exposed to many outbreaks of infectious disease, the training to prevent and control infectious disease is poor. Finally, the training in IDSR is non-existent or not systematized. Vocational and professional school faculty therefore need a solid and sophisticated understanding of One Health principles, as well as an in-depth understanding of outbreak surveillance, investigation and response.

The RESPOND team is in the process of developing twinning relationships with multiple regional universities and health professional schools, including anchor institutions such as the University of Kinshasa (UNIKIN) (public health, veterinary medicine), University of Lubumbashi (UNILU) (veterinary medicine), Institut Supérieur des Techniques Médicales (ISTM) – Kinshasa and Lubumbashi (nursing), École de Faune de Garoua, Cameroon (wildlife and natural resource management) and Cameroonian veterinary schools. Strengthened academic programming helps address human capacity gaps in field epidemiology and veterinary public health services. In partnership with the East Congo Basin office, the West Congo Basin office will also participate in activities that help develop and strengthen the OHCEA network. Finally, RESPOND will also facilitate the development of a cadre of professionals by supporting communities of interest made up of educators, researchers and scientists committed to an interdisciplinary and inter-sectoral approach to emerging pandemic threats.

Objective 3: Improve the capacity to conduct investigations of suspected outbreaks. RESPOND contributes material, logistical, technical and managerial support to strengthen the lines of command and communication among the sectors mentioned above. RESPOND also facilitates and reinforces the organizational capacity of outbreak response teams. For example, RESPOND will use the WILD training module to build the capacity of wildlife, livestock and human health professionals in Africa to investigating and respond to outbreaks of wildlife diseases and zoonoses using a One Health approach. We will also continue to build the capacity of national and provincial first responders to identify, diagnose, report and respond to outbreaks with the use of appropriate technologies, in collaboration with PREDICT, conservation and wildlife NGOs, and other partners in the field (i.e. AFENET, Central African Regional Program for the Environment [CARPE], CDC, WHO, OIE, and FAO), and will

integrate disease surveillance and response more fully into curricula at vocational schools and universities.

Objective 4: Introduce technologies to improve training, surveillance and outbreak investigations.

The communications infrastructure in the West Congo Basin presents many challenges for integrating appropriate and responsive information, communications, and infectious disease diagnostic technology. For example, access to most mobile technologies is limited to the major urban centers and internet access is costly and not widely available. In support of improved infrastructure, RESPOND supported server upgrades at UNILU and UNIKIN, in preparation for roll out of the Tufts University Sciences Knowledgebase (TUSK) platform. A discovery trip in Y1 revealed high interest in using e-learning platforms such as Claroline, Moodle and TUSK. In Year 3, RESPOND will continue to improve information and communication technology (ICT) infrastructure at UNIKIN and UNILU in order to strengthen linkages among academic institutions and between universities and the government (medical and veterinary laboratories and disease surveillance and response Directorates).

The section that follows highlights specific activities aligned to the Outbreak Response Capacity Building line of work that RESPOND will undertake in the West Congo Basin at a regional and country level.

(Please note that for the following sections presenting narrative descriptions of sub-activities, the term "partners" refers only to organizations that could be considered sub-awardees of the RESPOND project, and does not include collaborating organizations, institutions, or agencies.)

REGIONAL ACTIVITIES—WEST CONGO BASIN

LOW 3: OUTBREAK RESPONSE CAPACITY BUILDING

Sub-activities described in this section are not repeated again in the section for their respective countries, since they are considered regional sub-activities, not country-specific sub-activities, for purposes of this workplan. For some of these regional sub-activities, countries for implementation are specified below and the sub-activity titles are listed in the country sections for ease of reference. For others, greater detail about countries for implementation will be developed in the coming months.

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

RESPOND Activity 1.2 (linked to RESPOND Objective 1):

Sub-activity 1.2.1 WC: Conduct twinning and mentoring with universities and vocational schools. This sub-activity builds university capacity to graduate qualified individuals. The majority of RESPOND's capacity building activities targeting educational institutions is directed through a partnership with OHCEA. This activity provides specific, targeted support to DRC universities to strengthen their ability to participate in regional networks as a full partner. As a result, these activities will eventually be integrated into the OHCEA work plan. This specific sub-activity will, in concert with OCHEA activities, build linkages with other relevant educational institutions in the region, and fund participating Congolese universities and vocational schools involved with health education. Further, it will help bridge the longstanding resource gap between DRC OHCEA member institutions and those in other member countries.

Under this sub-activity, junior faculty from three participating academic institutions in DRC, specifically veterinary schools of UNILU and UNIKIN, and ISTM Lubumbashi, will improve their

teaching and research capacity through mentorship and coaching by senior professors from RESPOND university partners. RESPOND will also strengthen institutional relationships among DRC participating institutions and other OHCEA members to facilitate regional academic exchanges. At the same time, we will work with government stakeholders to strengthen relationships established with schools and universities under this sub-activity and identify ways to integrate One Health into government programs. Since its launch in Year 2, this sub-activity has already begun university partnership activities, has held consensus-building workshops on One Health strategy and has familiarized 10 faculty from UNIKIN, UNILU, ISTM Lubumbashi and advisors of the Minister of Higher Education with methods necessary to implement quality assurance programs for academic institutions initiated by the government.

In Year 3 RESPOND will collaborate closely with the Ministry of Higher Education to identify One Health-related skills gaps in government ministries and identify ways to fill these gaps while providing new opportunities for career advancement for veterinarians and medical personnel; continue the coaching process of junior faculty from participating schools, including providing more field work opportunities for outbreak response practice; facilitate in-person meetings between mentors and paired junior faculty members from participating DRC schools through visits to the US or to DRC and participation in international conferences; and will continue institutional relationship-building with partner universities (US, Cameroon and OHCEA).

- **EPT and Other Partners:** UNILU, UNIKIN, ISTM.
- **Results:** One Health-related skill gaps among junior faculty identified in areas of teaching and research and processes for establishing new fields of study and opportunities for career advancement to bridge the gap are initiated. Paired junior faculty participants, with senior faculty from RESPOND partner universities, are exposed to more field experience and have improved their capacity to teach and conduct research. Mentor and faculty exchanges occur for at least 6 junior faculty from DRC, paired with senior faculty. Universities will hold exchange visits with universities in the region (Uganda, Zambia, South Africa, and Kenya) and establish an MOU of collaboration. Gender awareness and the impact of gender issues in the development of One Health programs documented. Institutional relationships are strengthened and expanded to include more schools in Cameroon (Ecole de Faune de Garoua and Université des Montagnes), and OHCEA member schools and EPT university partners). Schools in Kinshasa and possibly Cameroon have been familiarized with institutional research method to implement quality assurance programs through 30 participant workshops. Improved communication and infrastructure for students and faculty.

Justification for Year 3 support: This twinning program is expected to continue beyond the RESPOND timeframe, and is a core objective for RESPOND. There is a need for additional support in Year 3, to further cement relationships established in Year 2 and expand the number of participating junior faculty and students under their supervision. This funding will enable the continuation of capacity building for DRC institutions during the formative stage of OHCEA.

RESPOND Activity 1.3 (linked to RESPOND Objective 1)

Sub-Activity 1.3.1 WC: Support regional and international exchanges of personnel to improve outbreak response and control; develop an action plan to strengthen and enhance ongoing career path development in the Democratic Republic of Congo. Implementing a regional One

Health strategy will require a critical mass of professionals committed to promoting and applying this approach at various levels across the country to achieve structural changes and capacity in a reasonable timeframe. Early on, in June of 2010, the DRC Veterinary Medical Association organized its annual meeting with funding from RESPOND West Congo (Sub-activity 2.1.2 WC) and the Belgian Technical Cooperation (BTC), during which participants assessed the state of the veterinary profession in DRC. This assessment identified a number of issues related to public health in general and animal health in particular, such as the imbalance between the supply and demand for medical and veterinary professionals, particularly in remote areas, the lack of career path strategy and policy for veterinary professionals, the lack of updated training for veterinarians, and the lack of a legal and regulatory framework for the control and prevention of zoonotic diseases.

Through this sub-activity, RESPOND supports the Fédération Une Santé (FUS) (One Health Federation), which represents health professionals who are at the frontline of disease surveillance and outbreak response. As a professional association, FUS offers RESPOND the opportunity to reach out and link health professionals to operationalize One Health. Already, through funding for this sub-activity, FUS has registered and established itself as a key stakeholder for the promotion of a One Health approach in the DRC. In Year 3, RESPOND will fund FUS to explore and assess career path growth in the animal and human health sectors, by advocating for the adoption of structural changes needed for the effective implementation of a national One Health approach, and by developing an actionable plan to strengthen health related careers in close collaboration with OHCEA and line ministries; facilitate the participation of professionals in regional exchanges, meetings and conferences to develop their skills as One Health leaders. Furthermore, FUS will continue advocacy activities that will lead the development of policies capable of spearheading structural changes needed to implement One Health strategy.

- **Partners:** FUS
- **Results:** Situation analysis of health professions conducted and results disseminated; FUS has established communication mechanisms and in-service training program that facilitate exchanges of educational and informational materials among health professionals in DRC; a regional workshop of professional associations held bringing together up to 120 people.

Justification for Year 3 support: Through the development of a network and outreach program that facilitates knowledge management and sharing, RESPOND will strengthen collaboration between DRC health professionals from various disciplines through the development of a network and outreach program that facilitates knowledge management and sharing among themselves and with colleagues from neighboring countries in order to improve disease surveillance and outbreak response. In the long term, support to FUS will help create an effective One Health network of professionals that facilitates educational development, information sharing, and a platform for policy formulation contributing to strengthened disease surveillance, outbreak investigation, and response capacity.

RESPOND Activity 1.5 (linked to RESPOND Objective 1)

Sub-Activity 1.5.1 WC: Conduct professional continuing education through didactic and field training workshops using the WILD module. WILD training was initiated in 2010 by FAO-EMPRES, Wildlife Unit, and applied in East Asia and Southern Africa. Currently supported by FAO, WILD contributes to all the priority areas identified for RESPOND. Participants are drawn from

wildlife, livestock and public health sectors, initially focusing on potential leaders of the One Health concept and subsequently providing training to field operatives responsible for investigating wildlife disease and zoonoses. WILD trainings encompass a series of mixed didactic and experiential courses combined with field visits over 10-12 days, and covering topics such as disease and landscape ecology, anthropogenic and environmental drivers of disease emergence and risk based surveillance.

In Year 2, and with coordination provided through AU-IBAR, RESPOND supported the adaptation of WILD to the African context (“WILD 1”) and delivery of the first workshop in Rwanda in July 2011. This workshop, which focused on savannah ecosystems, involved 24 participants from the ministries responsible for human, livestock and wildlife health from 10 countries. RESPOND will support a similar WILD 1 training in Cameroon in October 2011, aimed at ministerial staff in countries with equatorial rain forest ecosystem. Another workshop, targeting ministerial staff in countries with mainly savanna and forest ecosystems, will be held in Ghana in November 2011 using separate funding. In Year 3, RESPOND will focus on training potential trainers for WILD 1 modules and also adapt the WILD approach to target field-level professionals (“WILD 2”). These modules will focus specifically on national and transboundary needs of One Health teams, looking at locally important infectious diseases and ecosystems of concern, building more strongly on clinical skills of wildlife health professionals (e.g. capture and sampling of priority wildlife species) and their integration with or into the veterinary and public health sectors. Also in Year 2, RESPOND initiated support for the development of a UNEP-IUCN Species Survival Commission Wildlife Health Specialist Group in the EPT countries, as the biodiversity/environment professional contribution to the One Health approach. This network will help sustain the professional connections made during the workshops, and can serve as a technical resource for joint initiatives on emerging diseases, responses to major disease outbreaks, and development of AU-IBAR’s Integrated Regional Coordination Mechanism (IRCM).

- **Partners:** AU-IBAR, Royal Veterinary College, FAO-EMPRES wildlife unit, PREDICT, IDENTIFY
- **Results:** Didactic and experiential WILD training workshops conducted in two EPT countries (actual countries of training to be further determined) with approximately 25-30 ministerial staff each; WILD trainees integrated into wildlife health monitoring and disease surveillance activities in EPT countries where training is conducted through mentoring; continue to support wildlife expert position in AU-IBAR; and support collaboration and networking of Wildlife Health Specialist Group.

Justification for Year 3 support: The shortage of wildlife health specialists in Africa was identified by AU-IBAR and OHCEA as a significant constraint to operationalizing the One Health approach in Africa. Enabling trainees to use their skills to support wildlife health monitoring and disease surveillance within national frameworks is a critical part of supporting career path development and transforming practices. AU-IBAR works to strengthen the skills of wildlife health professionals in Africa, and is supporting the implementation of an Integrated Regional Coordination Mechanism (IRCM) within the regional economic communities to institutionalize disease prevention and control efforts. AU-IBAR is considering institutionalization of WILD as part of professional health training across the African continent.

Sub-Activity 1.5.5 WC: Support the Mentoring for Environmental Training in Outreach and Resource Conservation- Forest Ecology and Stewardship Training (MENTOR-FOREST) program by adding One Health content and supporting fellows and a mentor from Gabon and

the Republic of Congo. The MENTOR-FOREST program is an innovative collaboration among the US Fish and Wildlife Service, US Forest Service, and the Gabon National Parks Agency, to train a multi-disciplinary team of Central African forest resource professionals and civil scientists. The team will improve upon the current forestry paradigm, identify new forest stewardship strategies, develop innovative approaches to mitigate impacts of forestry on ecosystems and provide information critical to the sustainable management of forests ecosystems. Understanding the linkages between emerging diseases and pathogens associated with timber industry and logging practices, and the strategies to reduce associated risks, is critical to the sustainable management of tropical forests. Through this sub-activity, RESPOND will build the capacity of a multi-disciplinary team of Fellows to understand the One Health approach, the linkages between emerging diseases and pathogens associated with timber industry and logging practices and the strategies to reduce risks through an intensive, multi-disciplinary training program focused on the strategies most relevant to Congo Basin forests.

Beginning in Year 2, RESPOND supported the participation of one fellow and one mentor, and the development and delivery of a curriculum module for the MENTOR-FOREST program. To date, RESPOND has already developed a timeline of activities in concert with MENTOR-FOREST, and expects to have the training module drafted by the end of Year 2. In Year 3, RESPOND will finalize the curriculum module that uses One Health approaches to help students understand the relationship between forestry/logging practices and emerging infectious diseases, and the strategies to reduce risks to human, wildlife, domestic animal, and ecosystem health; provide financial support for the selection and participation of one fellow and one mentor with health-related backgrounds; and provide financial support for a health-related component of the field practical exercises.

- **Partners:** United States Fish and Wildlife Service, United States Forest Service, Gabon National Parks Agency, Gabon National School of Water and Forests.
- **Results:** Curriculum module and associated materials on the relationship between forestry/logging practices and emerging infectious diseases, and the strategies to reduce risks to human, wildlife, domestic animal, and ecosystem health are developed in French and English, evaluated and delivered; health-related field practical exercise component developed; one fellow out of a total of 10 fellows and one mentor out of a total of 3 mentors with health-related backgrounds are participating in the program.

Justification for Year 3 support: The MENTOR-FOREST sub-activity is a major entry point for RESPOND WCB to engage with extractive industry in the field. In Year 2, the fund was used to support one student from Gabon and a mentor, and to support the development and delivery of a curriculum module on the relationship among logging, ecosystem alteration, wildlife behavioral changes and the potential for emergence of infectious diseases.

RESPOND Activity 3.1 (linked to RESPOND Objective 3)

Sub-Activity 3.1.1 WC: Strengthen systems for disease surveillance, outbreak investigation and response with a One Health approach. Through this sub-activity, RESPOND will support the elaboration of the national program against zoonotic emerging and re-emerging disease and develop the One Health multisectoral disease surveillance, outbreak investigation and response coordination mechanisms at national, regional, and district levels in Cameroon, where multisectoral committees against Highly Pathogenic Avian Influenza (HPAI) H5N1 were established in 2006; however, these committees ceased functioning at the end of the HPAI H5N1 common fund. Among the reasons of

cessation of activities were single-disease focus (HPAI H5N1), and lack of resources to support the initiative. While WHO-AFRO's recent review and update to the IDSR promotes rational use of resources by integrating and streamlining common surveillance activities and response, its implementation still needs to be enhanced at the district level where the focus for integrating surveillance functions takes place.

Already in Year 2, RESPOND organized meetings with Ministries and professional association and the ad hoc committee in charge to elaborate the national program to start building consensus and support the elaboration of the national program and the validation of One Health multisectoral disease surveillance, outbreak investigation and response coordination mechanisms. In Year 3, RESPOND will provide technical support to ad hoc committee in charge to elaborate the national program against emerging and re-emerging diseases in Cameroon to review all existing assessments of health surveillance and outbreak response systems and to carry out gap analyses of each existing system in human, animal, and wildlife health sectors; organize national workshops to build consensus around One Health approach, and improve coordination mechanisms for disease surveillance and outbreak investigation and response; and elaborate the national program. RESPOND will work in coordination with WHO-AFRO, FAO-ECTAD, and the CDC.

- **Partners:** PREDICT, IDENTIFY, PREVENT, MoH, MoA, MoEnv
- **Results:** Gap analysis undertaken and outcomes made available; national program against emerging and re-emerging zoonotic diseases is available; a One Health strategy to strengthen coordination mechanisms is developed and validated, in Cameroon via 3 national workshops with 30 attendees each; and collaborative tools (IDSR, PDSR) for disease surveillance, outbreak investigation and response are elaborated and adopted.

Justification for Year 3 support: Although IDSR takes into account the One Health approach that addresses events at the intersection of human, domestic animal, wildlife, and ecosystem health, its implementation still needs to be enhanced at the district level where the focus for integrating surveillance functions takes place, such as monitoring health events in the community, mobilizing community action, and encouraging national contribution and accessing regional resources. Thus, there is a need to revitalize and strengthen coordinating structures, and promote collaborative mechanisms that involve ministries, WHO-AFRO, FAO, OIE, NGOs, universities and communities, to coordinate efforts and mobilize resources in a longer term perspective, while addressing historic imbalances among human, animal and ecosystem health. Addressing these issues at the national level in DRC will better prepare them to participate in regional networks, such as OHCEA.

RESPOND Activity 3.4 (linked to RESPOND Objective 3)

Sub-Activity 3.4.4 WC: Outbreak response training for multi-disciplinary teams at national and sub-national levels, including training of front line health workers in outbreak response.

Through this sub-activity, RESPOND, in collaboration with AFENET, will train multi-sectoral and multi-disciplinary teams at national, provincial and district levels, teaching them proper methods of risk-based disease surveillance and effective outbreak response. We will assess skills of existing outbreak teams and outbreak response structures; build AFENET capacity to train professionals in areas such as participatory epidemiology (PE), and participatory impact assessment (PIA) in coordination with similar activities in the East Congo basin; conduct short courses to build capacity in field epidemiology, risk analysis and outbreak investigation among field staff operating at the

Ministries of Agriculture, Health and Environment; and review outbreak response mechanisms with linkages to the central government.

- **EPT and Other Partners:** AFENET, AU-IBAR
- **Results:** 28 personnel from the ministries of Agriculture, Public Health and Environment, Conservation of Nature and Tourism trained in zoonotic diseases, field epidemiology, outbreak investigation and response; SOP for outbreak investigation and response developed; ; an in-service continuing education program in zoonotic risk-based disease surveillance, outbreak investigation and response and participatory epidemiology has been developed for each ministry in collaboration with FUS and OHCEA; participatory epidemiology (PE) manual translated and pre-tested in French; build AFENET capacity to train professionals in PE and participatory impact assessment (PIA.).

Justification for Year 3 support: Standard Operating Procedures and resources to ensure sustainable multi-sector collaboration including the participation of laboratory personnel and clinicians in outbreak investigation and response are not yet established in the West Congo Basin area. This sub-activity will address human resource capacity building—particularly in field and participatory epidemiology—and help develop mechanisms for an effective and integrated outbreak response system at the central and provincial levels.

COUNTRY ACTIVITIES—DEMOCRATIC REPUBLIC OF CONGO

LOW 3: OUTBREAK RESPONSE CAPACITY BUILDING

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

RESPOND Activity 1.2 (linked to RESPOND Objective 1)

Sub-Activity 1.2.3 WC: Upgrade the skills of faculty at ISTM; Institut Technique Agricole and Vétérinaire (ITAV); and Institut d’Enseignement Medical/Institut Technique Medical (IEM/ITM). Through this sub-activity, RESPOND will improve the skills of vocational faculty in animal and human health, to improve the nation’s capacity for surveillance, and response to zoonotic diseases. The vocational training system in DRC has professionalized the education of nurses and veterinary technicians; however, despite strong curricula, faculty at both ISTM and ITAV have identified a need for increased training in participatory epidemiology and zoonotic disease surveillance and response. In 2004, under the Reform of Vocational Schools, the competency-based approach to vocational education was piloted in 17 IEM/ITM nursing schools in 11 provinces. The new competency-based curriculum is well designed; it prepares young nurses for practice in rural communities; it includes disease response coursework such as participatory epidemiology and zoonotic disease.

Through this sub-activity, RESPOND will continue curriculum improvements through a sub-award that will support development of a competency-based One Health outbreak and response curriculum and train ten National Master Trainers among selected faculty from ISTM, ITAV, and IEM/ITM, by selected experienced faculty from ISTM Lubumbashi and UNILU. RESPOND will provide materials such as equipment, consumables, and manuals for the pilot schools. Ultimately, these integrated One

Health curriculum modules on outbreak investigation and response will be incorporated into curricula at ISTM and vocational schools by National Master Trainers. In Year 2, RESPOND began a competitive grant process to support this sub-activity; in Year 3, we plan to link this sub-activity with OHCEA, given that the partners are participating OHCEA universities.

- **EPT and Other Partners:**, UNILU, ISTM Lubumbashi
- **Results:** One Health competency-based curriculum and modules are co-developed and implemented in ISTM and for vocational schools; 10 national master trainers trained; and training-related materials provided for pilot schools.

Justification for Year 3 support: Vocational level graduates are the backbone of the nation’s animal and human health workforce. They are the primary providers at the district and health zone levels and will serve as outbreak first responders for most communities. Vocational faculty therefore need a solid and sophisticated understanding of One Health principles, as well as an in-depth understanding of outbreak surveillance, investigation and response. As described above in our strategy for the West Congo Basin, we will continue to build capacity of DRC institutions to enable their full participation in regional networks in the future.

Sub-activity 3.4.1 WC: Deliver refresher outbreak response training to rural medical personnel and first-responder training to communities in the USAID-CARPE Salonga-Lukenie-Sankuru Landscape region. This sub-activity will strengthen the multi-sectoral surveillance, disease outbreak investigation, and response capacity in the Salonga-Lukenie-Sankuru Landscape, an identified “hotspot” for zoonotic disease. As the entire area of intervention has endemic monkeypox, RESPOND trained 60 rural medical personnel as well as 20 professionals and technicians from the Ministry of Agriculture (Veterinary Services), Congolese Wildlife Authority (ICCN) and NGOs, in Tshuapa district, in collaboration with UNIKIN, CDC and WWF. The training contents addressed Multisectoral Integrated Disease Surveillance and Response (IDSR+) in a One Health approach. After the training, PPE was supplied not only to the trainees through the official channels but also to Boendé hospital and to the National Institute for Biomedical Research in Kinshasa. Field equipment will also be provided for the trainees in the district by the end of Year 2. Community relay training and community educational outreach is being undertaken by the International Conservation and Education Fund (INCEF) in 25-30 villages of the Tshuapa District. If deemed successful, the outreach activities and first responder training (community relays) might be extended (i.e. Monkoto area).

- **EPT and Other Partners:** PREDICT, INCEF
- **Results:** Health education and community outreach is being undertaken by InCEF in 25-30 villages. At least 6 community educators will be selected and trained to carry out the outreach sessions. Provision of communications and transport equipment to the Ministry of Agriculture, Ministry of Environment, and Ministry of Public Health. Equipment will include motorcycles, communication radio equipment, bicycles and rubber boots.

Justification for Year 3 Support: Training of community relay health workers and educational outreach sessions by INCEF will continue through Year 3 and will be monitored by RESPOND in collaboration with PREVENT.

LOW 3.2 Support outbreak response activities

RESPOND Activity 4.1 (linked to RESPOND Objective 3)

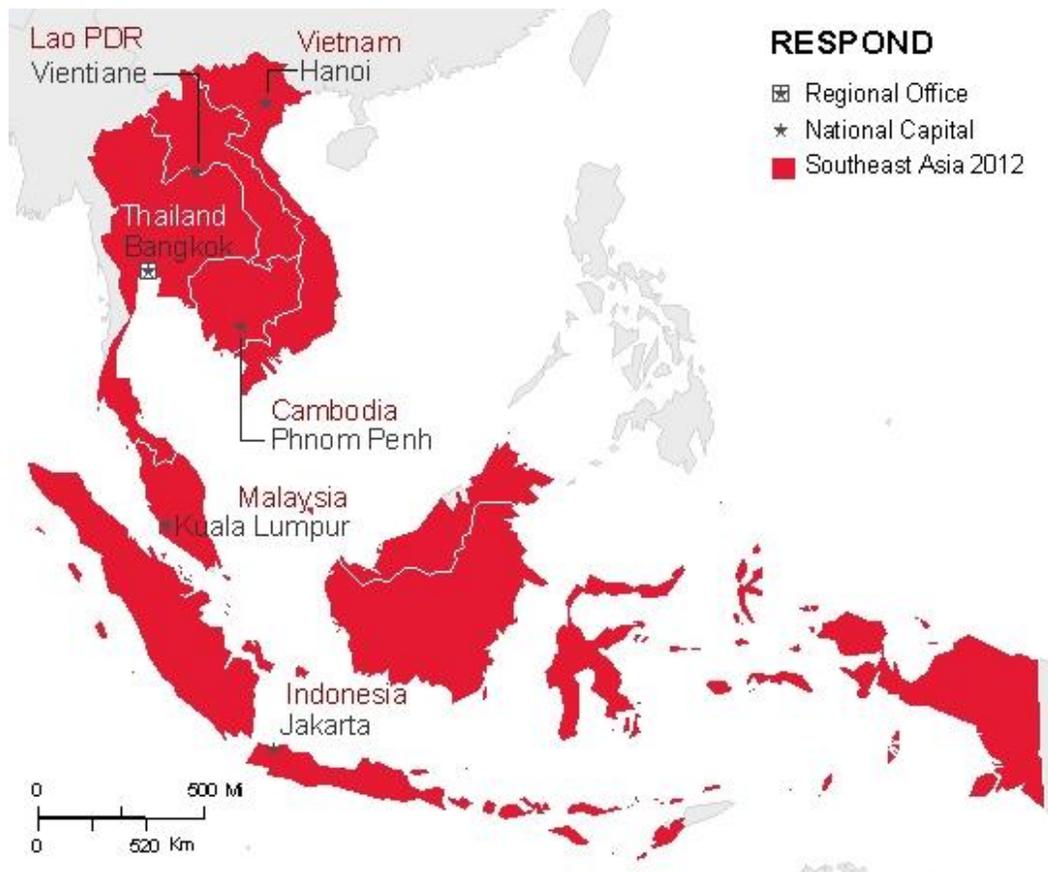
Sub-Activity 4.1.2 WC: Evaluate existing Knowledge Management Systems for the health science, their application and use in the university context, and support the improvement and integration of appropriate systems. Through this sub-activity, RESPOND will implement the TUSK knowledge management system at UNIKIN and UNILU (linked to implementation at Makerere University in Uganda). TUSK is a comprehensive knowledge management system designed specifically for health education that will be used for curriculum co-development across RESPOND partner schools. However, the system has broader uses that meet the needs of university administrators, faculty and students. For a school with scarce resources this means a small staff is able to manage many complex tasks through one a large application. TUSK combines course management functionality with tools for curriculum management, content management, curriculum mapping, competency assessment and tracking, and personal knowledge management.

This sub-activity was launched in Year 2, when the TUSK Director and System Administrator visited the DRC and Uganda for a preliminary assessment of the current level of technology, staffing availability including skill level, and receptivity to TUSK functionality at potential partner schools. RESPOND also supported the installation of servers at UNIKIN and UNILU, provided IT training for their maintenance, and developed continuing relationships between systems administrators at UNIKIN, UNILU and Tufts. Year 3 activities will focus on systems administrator and logistical support, continued expansion and upgrade of university infrastructure and user training for TUSK. RESPOND will also seek to collaborate with ICT programs funded by BTC and Agence Universitaire de la Francophonie.

- **EPT and Other Partners:** UNIKIN, UNILU
- **Results:** Continue infrastructure (Intranet) upgrade and expansion to allow better linkage between University and Government laboratories (INRB and central veterinary laboratory), at least 15 TUSK users (students and faculty and government laboratories) in each university will be trained; TUSK user support group provided with technical and management support.

Justification for Year 3 Support: In Year 2 the focus of activities was in setting up server infrastructure for TUSK. Year 3 activities will be more focused on use of the infrastructure through training, and coaching to ensure maximum benefit in terms of the cost efficiencies associated with e-learning. Through this support, veterinary and public health schools at UNIKIN and UNILU will be virtually connected to other schools (nursing, forest management) and government medical and veterinary laboratories, facilitating exchange of information and knowledge management involving several health fields. This activity will also help ensure that curricula and other contents are co-developed in collaboration with OHCEA and RESPOND partner universities.

REGIONAL VISION— SOUTHEAST ASIA



The map above of the Southeast Asia region displays where RESPOND currently works.

In Southeast Asia, there is a high level of awareness and receptivity to the One Health concept and approach, in addition to well-developed existing regional networks, platforms, and capacities to respond to emerging pandemic threats. As a result of the region-wide response to HPAI H5N1 in recent years, links between human and animal health sectors exist, but require strengthening, including improving current levels of awareness about One Health, additional capacity building efforts, and resource allocations to ensure sustainability. Linkages among the human and animal health sectors and the ecology and environment sectors also need to be developed and supported. Infectious disease surveillance and detection systems in wildlife, a prerequisite to effective, holistic outbreak investigation and response, remain a critically important unmet need in the region. Gaps exist in the supply of highly qualified bachelor and graduate-level training in animal health disease and environment and ecology studies in some countries. In addition, applied epidemiology training and outbreak-related data analysis and reporting skills and competencies are sometimes lacking.

To date, adequate resources have not been dedicated to the development of sustainable One Health skills and field experience among trainers, mentors, and managers in the Southeast Asian region and this

capacity varies widely between countries. Therefore, RESPOND must address these gaps as an important component of overall plans to strengthen surveillance and outbreak response systems for infectious disease prevention and control.

Significant advocacy efforts that encourage policy and systems changes to better support a One Health approach to emerging pandemic threats will help address this issue. Furthermore, RESPOND must balance its efforts at national, provincial and district levels so that there are training and capacity-building activities at each level. RESPOND strategy and programming focuses on continuing to build the evidence base for One Health, and catalyzing collaboration among government bodies, universities, and international health agencies responsible for outbreak investigation and response.

In Year 3, RESPOND will focus specifically on Objectives 1 and 3, with the majority of focus on university network development and in-service outbreak response training. RESPOND's vision includes creating a sustainable One Health university network in Southeast Asia that will provide trained leadership, ongoing capacity building, and technical support to governments in the development and strengthening of a cross disciplinary, transboundary approach to emerging infectious disease outbreak response and surveillance in the region. It is essential to note that this vision needs to be endorsed and supported by the Deans of the network member universities and therefore this may be altered to reflect their views once the network is formed and functional.

As with the other EPT regions, the principles that underpin Objective 2 will be supported and promoted through these objectives.

Objective 1: Improve training capacity for skills necessary to respond to suspected outbreaks.

One of RESPOND's key strategies in Southeast Asia is to develop and support a regional One Health network based upon government and university partnerships. The network will leverage existing capacity to strengthen and sustain public health infrastructure and outbreak response capability, build upon the framework of existing linkages between government and universities throughout the region, and identify and respond to areas in need of One Health capacity-building. The network will use lessons learned and experience gained from development of the OHCEA regional network in the Congo Basin. RESPOND's consortium partners will work together synergistically to provide technical support to the newly created Southeast Asia network and its members.

Given the critical unmet need for training and capacity-building in wildlife disease surveillance and outbreak response in the region, RESPOND is working on and planning to undertake a number of other capacity-building initiatives such as partnering with the Wildlife Disease Centre at Mahidol University to support applied field training and mentorship for newly-hired wildlife veterinarians working for the Department of National Parks, Wildlife and Plant Conservation (DNP). RESPOND also proposes to support training of wildlife rangers and forestry volunteers to monitor wildlife populations and to investigate potential outbreaks of disease in wild animals in Lao PDR as well as expand the capacity of future veterinarians in Lao PDR through technical support and guidance to their national agricultural university. RESPOND will continue to explore additional training and capacity-building needs and opportunities in the region for wildlife disease surveillance and investigation.

Objective 3: Improve the capacity to conduct investigations of suspected outbreaks. RESPOND will assess, reinforce and support training of One Health teams at all levels of government, particularly the provincial, and district levels in animal health, environmental health, ecology, and epidemiology. Examples of this include working with government officials, selected university faculty and international

health agencies to review the core competencies of One Health epidemiological teams at the provincial and district levels in Thailand, Vietnam, Cambodia, Lao PDR and Indonesia, and support for the design and delivery of improved applied epidemiology training materials and methods to enhance outbreak response capacity.

In Vietnam, RESPOND is working with the Applied Veterinary Epidemiology Training Program (Department of Animal Health, Ministry of Agriculture and Rural Development) the Ministry of Health and WHO, to enhance the outbreak response capacity and training of One Health epidemiological teams at selected provincial, district, and community levels. RESPOND will adapt and develop One Health curricula and provide financial and technical support for outbreak response capacity building training at provincial and district levels.

The section that follows highlights specific activities aligned to the Outbreak Response Capacity Building line of work that RESPOND will undertake throughout Southeast Asia at a regional and country levels.

(Please note that in the following sections that present narrative descriptions of sub-activities, the term "partners" refers only to organizations that could be considered sub-awardees of the RESPOND project, and does not include collaborating organizations, institutions, or agencies.)

REGIONAL ACTIVITIES—SOUTHEAST ASIA

LOW 3: OUTBREAK RESPONSE CAPACITY BUILDING

Sub-activities described in this section are not repeated again in the section for their respective countries, since they are considered regional sub-activities, not country-specific sub-activities, for purposes of this workplan. For some of these regional sub-activities, countries for implementation are specified below and the sub-activity titles are listed in the country sections for ease of reference. For others, greater detail about countries for implementation will be developed in the coming months.

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 1.1 (Linked to RESPOND Objective 1)

Sub-Activity 1.2.1 SE: Implement Twinning and Mentoring Program. RESPOND will develop and support a regional university network, OHSEA, that will serve as the platform for a sustained One Health approach in Southeast Asia by building the capacity, providing the tools and facilitating the relationships necessary for effective national, transboundary, and regional responses to emerging infectious diseases. The network will build upon the framework of existing linkages between government and universities throughout the region to identify and respond to areas of One Health capacity-building need. The network includes ten universities from four countries—Thailand, Vietnam, Malaysia, and Indonesia—and comprises faculties of public health, veterinary medicine, medicine, nursing and allied health sciences.

In May 2011, USAID and RESPOND hosted an inaugural meeting of Deans from the OHSEA faculties, and the network concept was endorsed wholeheartedly. At this meeting initial executive and coordinating committees were created and initial meetings have been held to establish a working group to lead the organization through the bridging period. As the network matures, it will expand to

the neighboring countries of Lao PDR and Cambodia. The network will link closely to, and provide resources for, government-led and RESPOND-supported activities such as in-service district and provincial level outbreak response and wildlife health training and capacity building. Finally, we will support linkages to other networks and partners in the region, in particular other EPT projects, the ASEAN university network, and APACPH. The US CDC is also a major player in outbreak response in the region, and our activities will therefore be coordinated with their existing training. In Year 3, RESPOND will develop the university network, and begin to undertake collaborative activities with network university partners, and other EPT project partners.

- **EPT and Other Partners:** IDENTIFY, PREDICT, PREVENT, OHSEA university members
- **Results:** Network coordinating office, operating plan (including budget, university staff participation, roles, relationships, tools, organizational development), secretariat and country coordinating committees established; regional forum to create 10-year vision and mission for OHSEA network held; RESPOND support provided to the network based on articulated needs; and priority RESPOND-OHSEA activities underway.

Justification for Year 3 Support: OHSEA will require continued support from RESPOND to operationalize in Year 3. Through a combination of grant funding and technical assistance, OHSEA will build its own capacity to address the challenge of future emerging pandemic threats in the region. It is evident that the individual institutions identified to lead the network are strong and capable leaders in their fields, but are still constrained by disciplinary and professional restrictions. The challenge for the network in Year 3 will be to overcome these restrictions and to establish new linkages and innovative approaches to planning, modeling and implementing a cross-disciplinary, cross-sectoral One Health approach to strengthen outbreak response capacity in the region.

Activity 1.2 (Linked to RESPOND Objective 1)

Sub-Activity 1.2.2 SE: Support relationship between Khon Kaen Veterinary Medical School (VMKKU) and the Faculty of Agriculture, Nabong Agricultural College (NAC) campus, National University of Laos (NUOL). In 2006, faculty from VMKKU recognized the significant need for veterinarians in the public sector in Lao PDR. Since then, VMKKU and NUOL have developed a cooperative relationship that allows for faculty and student exchanges, strengthens human resource capacity, encourages co-hosting of academic and research initiatives, and enables curriculum co-development. Present efforts by the Veterinary Medical School at KKKU are focused on delivery of eight 8-week training courses to veterinary students from Nabong Agricultural College over the next three years with the aim of upgrading their skills and knowledge in the animal health field. In June 2011 a regional One Health conference was held at VMKKU and staff and students from NAC/NUOL attended and participated in the conference with support from RESPOND. In addition, recent visits by RESPOND to the faculty of public health at KKKU and to the University of Health Sciences in Lao PDR have further identified potential areas of collaboration between the two faculties to build One Health capacity in Lao PDR. In addition to this relationship, VMKKU collaborates actively with a number of universities currently engaged in RESPOND's OHSEA activity, further demonstrating the potential of this activity to influence outbreak investigation and response capacity beyond these two universities.

In Year 3, RESPOND will support and strengthen training of students of veterinary medicine from Lao PDR by facilitating faculty and student exchanges between VMKKU, NAC/NUOL and Tufts

University; assisting with the design and delivery of classroom and field based training activities on outbreak investigation and response for students and faculty from Nabong Agriculture College, Lao PDR; strengthening wildlife health teaching and diagnostic capacity at VMKKU; and supporting increased enrolment of students from Lao PDR into Masters programs at VMKKU. Government and international partners will include MOA Department of Livestock and Fisheries, National Emerging Infectious Diseases Coordination Office (NEIDCO), and FAO.

- **EPT and other partners:** PREDICT; University partners: Khon Kaen University (Faculties of Veterinary Medicine and Public Health), National University of Laos (Faculty of Agriculture), University of Health Sciences, Lao PDR
- **Results:** Short training courses on diagnostic techniques, clinical practice in livestock, food hygiene and sample collection for human and animal health professionals from Lao PDR designed, organized and delivered to 10 participants (veterinarians and animal and health workers) training of 50 students from NAC/NUOL by staff from VMKKU; training of 25 students from NAC/NUOL on laboratory practice at VMKKU's Department of Pathobiology and Veterinary Public Health; 2 VMKKU professionals receiving a one month technical exchange at Tufts University for improvement of skills on disease diagnostic and prevention; enrollment of 2 students from Lao PDR and other countries into a Master program and 3 students into a Certificate program at VMKKU.

Justification for Year 3 Support: Support for VMKKU faculty development and VMKKU faculty support of NAC/NUOL strengthens the capacity of veterinary training at both institutions and facilitates entry of both VMKKU and NAC/NUOL to the Southeast Asia University network. As Lao PDR currently has a severe shortage of veterinarians, support to improve and strengthen staff capacity and student training at NAC/NUOL will have positive implications for the future workforce and for the ability of Lao PDR to respond to outbreaks of emerging infectious diseases.

Line of Work 3.2: Support to Outbreak Response Activities

Activity 2.4 (Linked to RESPOND Objective 2)

Sub-Activity 2.4.4 SE: Support Regional TEPHINET Conference in Bali, Indonesia. TEPHINET was established in 1997 with the intent to help strengthen international public health capacity through the support of field-based training programs in applied epidemiology and public health practice. The challenge is to ensure that training programs provide graduates with a solid foundation in the science of epidemiology as well as the capacity to manage the resources of our public health systems.

Every two years, TEPHINET holds a bi-regional scientific conference for the South East and Asia Pacific regions. This is a gathering of public health professionals who share experiences and lessons learned in outbreak investigation and response and public health interventions. Pre-conference workshops provide short-courses to upgrade the knowledge and skills of the participants. This conference strengthens networks of field epidemiologists who are vital in the efforts to ensure preparedness and ability to respond to global health threats; especially threats of pandemic nature.

The 6th TEPHINET Bi-Regional Scientific Conference will be held November 7-11, 2011 with the theme "Global Surveillance Networking for Global Health." The South Asia Field Epidemiology and Technology Network (SAFETYNET) will play a major role in helping the host country prepare for the conference by working closely with the Indonesian Ministry of Health, TEPHINET, and the

various committees in the preparation and conduct of the scientific conference and the pre-conference workshops, and by working with RESPOND to provide financial support to participants.

- **EPT and Other Partners:** SAFETYNET, Indonesian Ministry of Agriculture, others TBD
- **Results:** Organization and delivery of 6 pre-conference short courses, with maximum of 30 participants each; 4 plenary speakers deliver scientific papers at the conference; scholarships for up to 100 FET students to attend and deliver oral presentations on their field work provided.

Justification for Year 3 Support: This sub-activity will further consolidate support for a One Health approach to outbreak response across the region. It is expected that some 700 abstracts from more than 40 countries will be submitted of which about 100-150 will be accepted for oral and poster presentations. Since some of the participants accepted for presentations do not have access to financial support to attend the conference, TEPHINET and SAFETYNET, in coordination with the host country Indonesia, are seeking support for their attendance. With financial support from RESPOND, selected participants, including 12 animal health staff from Indonesian Ministry of Agriculture that are studying epidemiology at the Faculty of Medicine and Faculty of Veterinary Science, Gajah Mada University, Yogyakarta, will be able to attend. Preference for the remaining scholarships will be given to participants from countries with newly established FETPs (Vietnam) and to FET supervisors/mentors from countries with modified applied epidemiology training programs who would benefit from the opportunity to attend and present at an international conference (Lao PDR and Cambodia).

COUNTRY ACTIVITIES—THAILAND

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 1.5 (Linked to RESPOND Objective 1)

Sub-Activity 1.5.2 SE: Applied field training for wildlife veterinary medical officers and field pathologists. Thailand was affected by HPAI across many sectors. Reports showed that H5N1 caused fatality in wild birds (Asian open bill storks, raptors). Moreover, confirmed cases from Thailand revealed that the virus jumped into mammals including domestic cats, tigers and clouded leopards, with fatalities documented. Other zoonotic diseases associated with wildlife have also been reported from Thailand, such as leptospirosis, *Streptococcus suis*, SARS, H1N1, and tuberculosis. Spillover to and from livestock species has been observed. At present, a routine surveillance program conducted by government agencies covers all domestic livestock species, and diagnostic capacity for livestock diseases is good, but currently no surveillance system exists for wildlife diseases at the national level.

RESPOND is committed to increasing national preparedness to manage disease outbreak investigation and diagnostics, specifically within wildlife populations and to respond to such events in the future. This activity proposes a series of training workshops to increase the professional capacity of DNP veterinarians to serve as professional field wildlife veterinarians.

- **EPT and Other Partners:** Mahidol University, Department of National Parks, Zoological Society of Thailand

- **Results:** The final workshop completed (with 15 trainees), of a four workshop program started in Year 2, resulting in a cadre of veterinarians working for the DNP who have been trained in the investigation, monitoring and surveillance of infectious diseases of wildlife, in particular wildlife zoonoses and emerging infectious diseases; DNP veterinarians will be able to respond effectively to outbreaks of emerging infectious diseases in wildlife in Thailand; DNP veterinarians will be able to implement surveillance programs in wildlife and to work closely with other agencies involved in disease surveillance in domestic animals and humans to ensure that the National Disease Surveillance network is fully functional and integrated; The DNP veterinarians will be able to act as mentors for future cohorts of veterinarians employed by DNP.

Justification for Year 3 Funding: This is the first time that veterinarians have been employed in the government department responsible for overseeing the conservation of Thailand's wildlife. Training of these veterinarians in wildlife diseases, epidemiology and outbreak response strategies will have a significant impact on the management of the health of wild and confiscated animals in Thailand and will build capacity in a vital area to strengthen government disease control capabilities.

Sub-Activity 1.5.5 SE: Master's Degree Program for Human & Animal Health Professionals at Thailand's Field Epidemiology Training Program (FETP/FETP-V) and International FETP (iFETP) to Strengthen Career Opportunities, and the Management, Supervisory and Response Capacity for Outbreaks and Epidemics of Zoonoses and Emerging infectious Diseases. Thailand has been running an FETP program since 1980; in 2008, with support from USAID and FAO, the Government of Thailand expanded this training to include a veterinary component (FETP-V). Graduates from the Thai FETP program currently serve as the core government workforce responsible for the management and response to infectious disease outbreaks in humans. The FETP-V is developing a cohort of veterinary epidemiology leaders for the animal health services. In addition, graduates of the iFETP have served as a core group of experienced field-trained professionals for FETPs in the Southeast Asia region, including Vietnam, Malaysia, and other countries.

In recent years there has been an increased demand for graduates of the FETP/FETP-V to serve as trainers, supervisors, and mentors for students in these programs, as well as for other human and animal health professionals serving at the provincial and regional levels. Because academic training to at least a Masters Degree level is important from both a career development perspective, and for supervisory and management purposes, establishing a degree program has benefits for the FETP/FETP-V, as well as iFETP, and countries utilizing graduates in the public health system. With RESPOND support, Thailand will work with the MoPH to facilitate a Masters degree program for cohorts of FETP/FETP-V and International FETP graduates at selected Thai universities, which will not only increase relevant knowledge and skills, but will also expand the network of well-qualified public health professionals with an understanding of field epidemiology, increase collaboration between universities and government, enhance career development, and support retention of qualified government staff. Continuing in Year 3, RESPOND will support the enrollment of seven FETP/FETP-V/iFETP graduates in a Thai university Masters or equivalent degree program (e.g. higher graduate diploma) based on governmental priorities, and will provide technical and logistical support to the students and participating universities.

- **EPT and other partners:** CDC-Atlanta, CDC-Thailand and FAO (Bangkok regional office), MoPH, MOA/DLD (Department of Livestock Development) and selected universities.

- **Results:** Support Masters or equivalent degrees for 7 graduates enrolled in a university Masters program in Thailand; which will provide enhanced skills and knowledge of FETP/FETP-V students and graduates who serve as the core group of officials responsible for responding to disease outbreaks and epidemics in Thailand and the region; enhanced retention of highly qualified government employees by providing a unique opportunity for an advanced degree; improved collaboration between leadership of universities and FETP/FETP-V leadership; initiation of a plan to co-develop a Masters program to better fit governmental needs (e.g. 1 year duration vs. 2 year duration), with a balance between the theoretical aspects of academic courses with the need for government employees to understand the practical aspects of response and management of actual outbreaks and epidemics; improve access of content to FETP/FETP-V students and graduates through distance learning, including online resources and materials.

Justification for Year 3 Support: The FETP/iFETP leadership has already negotiated with several Thai universities and reached agreement for FETP students to receive a reduction in the cost of the tuition normally paid by students enrolled in the Masters Degree programs and, similar to the United States, at least one Thai university Masters program has offered to decrease the time required for FETP students to complete a Masters degree (e.g. requiring only one year vs. the two years normally required), granting credit-hours for the coursework and training received at the FETP program.

Activity 3.4 (Linked to RESPOND Objective 3)

Sub-Activity 3.4.4 SE: Support training to strengthen One Health epidemiological teams at the provincial and district levels. Thailand already has extensive experience and success with the teamwork developed among animal and human health professionals during the country’s successful response to HPAI/H5N1. RESPOND and partners will work collaboratively to build upon this experience, supporting the FETP/FETP-V plan to expand training to include topics in a wider range of emerging infectious diseases in both animal (livestock and wildlife) and human populations, and in the One Health approach to outbreak response, improving the quality of training and the effectiveness of provincial and district-level teams, and thereby better protecting the health of human and animal populations.

In Thailand, short course in-service training designed specifically for provincial and district Surveillance and Rapid Response Teams (SRRTs) currently exists. Training normally includes both team leaders (most frequently physicians and technical health officers) and team members (provincial and district health officials). Only a few veterinarians have joined this training in recent years, which trains about 20 teams annually. This sub-activity will strengthen selection processes for participants and improve training and coursework; including training of trainers at faculties of public health and nursing to increase epidemiology capacity. It will also broaden activities to include additional animal and wildlife health professionals, as well as other human health staff involved in surveillance (e.g. nurses), and will enhance and expand support for activities to include additional provinces where such in-service courses have not yet been conducted.

- **EPT and Other Partners:** FETP/FETP-V/iFETP, Ministry of Public Health (MoPH), Ministry of Agriculture; World Health Organization; Thailand-CDC Collaboration; CDC; EPT partners; FAO/OIE.
- **Results:** A one-week TOT workshop conducted for 30 trainers; short-term training courses delivered in 5 provinces to approximately 50 district and provincial level officials; mentoring and monitoring provided to oversee 2-3 month field projects to be carried out by the trained officials;

Review and improvement of existing training materials; Improvement of training and coursework.

Justification for Year 3 Support: Based on initial discussions held in Thailand during the discovery phase of the RESPOND project (July-August 2010), leadership of the FETP/FETP-V programs and senior advisors to the MoPH and MoA stated that an activity to strengthen in-service training in the areas of applied epidemiology, disease surveillance and early identification and response to outbreaks for One Health teams responsible for infectious disease outbreaks at the provincial and district levels was a high priority. This will lead to an increased scope of short-term One Health applied epidemiology in-service training to provincial and district-level staff in multiple provinces; improved quality of training materials and methods, based on monitoring and evaluation, and collaborative efforts to strengthen course effectiveness; follow up of initial training, including a review of the findings of field projects, and associated training to improve the capacity of staff in: data analysis and interpretation, early outbreak identification and reporting, outbreak communication (including the need for providing timely and accurate health information to managers responsible for disease prevention) and control activities; improved training and capacity of surveillance and rapid response teams (SRRTs) to safely collect and properly transport samples to enable determination of the causes of disease outbreaks; improved teamwork among human and animal health professionals during outbreak response at the district and provincial levels, including wildlife professionals and nurses working in disease surveillance and outbreak identification and response.

COUNTRY ACTIVITIES—VIETNAM

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 3.4 (Linked to RESPOND Objective 3)

Sub-Activity 3.4.2 SE: Support training to strengthen One Health epidemiological teams with focus on Applied Veterinary Epidemiology Training (AVET) at selected provincial, district levels. Based on initial discussions held in Vietnam during the discovery phase of the RESPOND project (July 2010), one key EPT strategy supported by the Government of Vietnam was to strengthen outbreak response-related training at the provincial and district levels. While the Government of Vietnam has previously supported the WHO-linked in-service activity for short-term district and provincial training, funds were not available to continue this activity in additional provinces, so no follow-up was possible to determine if the concepts learned in the classroom were actually applied in the field; moreover, during the pilot training activities, livestock health professionals were not included in the training.

This sub-activity will develop and deliver Field Epidemiology Short Course (FESC)-style, short, in-service training courses and workshops for human and animal health professionals at the district and provincial levels, and will also enhance technical supervision and mentoring skills while strengthening existing materials and methods. RESPOND will support expansion of activities to include training-of-trainers, and to increase the focus on strengthening the AVET program. RESPOND will support implementation of 2-3 month long field projects following FESC workshops, with a focus on disease surveillance, outbreak investigation, providing appropriate supervisory and

mentoring activity to include data analysis and interpretation with the objective to provide timely and accurate health information to managers responsible for disease prevention and control activities.

- **EPT and Other Partners:** Hanoi Medical University Institute for Preventative Medicine and Public Health (a member of OHSEA); and other EPT partners.
- **Results:** One TOT for 20 trainers, 3 regional workshops for 20 trainees each, which will be followed by 2-3 month field activities with close monitoring and supervision of the assigned experts and one final experience sharing workshop with 90 participants.

Justification for Year 3 Support: As Vietnam is a priority EPT country, RESPOND will focus resources there in Year 3 of the project. The Year 2 concept paper and activity have been reviewed by and have the support of USAID-Vietnam, WHO-Vietnam, FETP-Vietnam (MOH), AVET officials, CDC-Thailand regional advisor, CDC-Vietnam, CDC-Atlanta, and FAO Vietnam and regional FAO officials. In Year 3, the activity will expand to additional provinces, and to incorporate groups that were not previously included (e.g. animal health professionals from AVET, nurses, clinicians, and wildlife officials) to the maximum extent possible. This will lead to an increased scope of FESC to provincial and district-level staff in multiple regions in Vietnam; improved quality of training materials and methods being used, based on monitoring and evaluation, and collaborative efforts to strengthen course effectiveness; improved training and system capacity to properly and safely collect and transport appropriate specimens to determine the cause of disease outbreaks; improved collaboration between Ministries at all levels in the areas of outbreak response, disease reporting, and support for international health priorities, including IHR regulations; improved teamwork of human and animal health professionals involved in outbreak response at the district and provincial levels, and evaluation of the contribution and effectiveness of Training of Trainers, FESC and field project-related training to build the skills and knowledge of participants.

COUNTRY ACTIVITIES—CAMBODIA

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 3.4 (Linked to RESPOND Objective 3)

Sub-Activity 3.4.7 SE: Support training to strengthen One Health epidemiological teams, including MOH and MOA staff, at selected provincial and district levels (New Year 3 Activity). USAID announced in spring 2011 that Cambodia would be participating in the Emerging Pandemic Threats program along with other countries in Southeast Asia. Subsequent to this announcement, RESPOND communicated with officials in the Ministry of Health of the government of Cambodia about the RESPOND concept of supporting collaborative in-service training activities designed to strengthen outbreak response capacity at the district and provincial levels, similar to Sub-Activity 3.4.2 SE approved for Vietnam. This concept is based on activities that include training-of-trainers, a short-term in-service training workshop on disease surveillance and outbreak response, and a 2-3 month field project to assure lessons learned in the classroom are applied to actual Ministry activities. The RESPOND concept in Cambodia will be based on the model of Vietnam and Thailand's ongoing in-service training, and will include collaboration with experts at WHO, CDC-Atlanta, CDC-Thailand and FAO (Bangkok regional office). We will also coordinate closely with leadership of national

epidemiology training programs, as well as the Ministry of Public Health (MoPH) and the Ministry of Agriculture, Forestry and Fisheries (MAFF).

- **EPT and Other Partners:** Sub-awardee TBD; EPT partners
- **Results:** While the results are subject to adjustment due to ongoing discussions with stakeholders, expected results include: development of Cambodia’s modified Field Epidemiology Training program with a focus on short-term training courses on the government’s prioritized zoonotic diseases; implementation of Cambodia’s Applied Epidemiology Training (AET) 6-8 month program with training courses/workshops for 25-30 students; TOT workshop conducted; 3 workshops (100 participants each) on prioritized zoonotic diseases conducted for provincial and district-level staff of MoH and MAFF; Rapid Response Team (RTT) members supported for practicing outbreak investigation (if outbreaks occur).

Justification for Year 3 Support: RESPOND will improve the quality of initial training, and expand the in-service training to additional areas within Cambodia in Year 3, and continuing over a three-year period. Unlike the Network countries, which have a well-developed FETP program, epidemiology is not a well-developed specialty within Cambodian universities, and is a recognized deficit by Cambodian government officials and international health organizations. This sub-activity will help improve knowledge and practical skills of in-service government staff at the district and provincial levels in the areas of: disease surveillance, outbreak identification, disease reporting, communication, teamwork and the effectiveness of joint outbreak response in provinces and districts.

COUNTRY ACTIVITIES—LAO PDR

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 1.5 (Linked to RESPOND Objective 1)

Sub-Activity 1.5.6 SE: Monitoring and disease surveillance training for Department of Forestry Protected Area (PA) staff and Forestry Volunteers in Lao PDR. Due to a significant lack of information on populations and distribution of wildlife in the Protected Areas in Lao PDR, a zoonotic disease outbreak originating in free ranging animals would not be detected at an early stage. Further, it is likely that a potential pandemic threat would only come to the attention of the government after it had become established in either domestic animal or human populations.

Through this sub-activity, RESPOND will help Lao PDR develop a patrolling, monitoring and disease surveillance system in Protected Areas; help link the Protected Area Teams (PAT) to village level OH teams, and establish a reporting system linked to the appropriate government authorities at the district and provincial level; build basic natural history and field skills of PA staff and Forestry Volunteers; familiarize members of PAT with the One Health approach to addressing potential zoonotic disease outbreaks; train PAT members on simple, appropriate sampling protocols and personal safety issues when investigating potentially diseased animals or animal carcasses, including the use of PPE equipment; create a core of government staff trainers to extend training to staff and locally recruited Forestry Volunteers in other Protected Areas, with the aim of developing an expanded wildlife patrolling and disease surveillance system in Lao PDR. As it develops, OHSEA will also serve as a technical and information resource to support this sub-activity.

- **EPT and other partners:** Sub-Awardee TBD; PREDICT, PREVENT
- **Results:** While the results are subject to adjustment due to ongoing discussions with stakeholders, expected results include: TOT organized for DoF district and provincial level staff; trainings on disease surveillance related issues (i.e., animal carcass handling and investigation, sample gathering/collection, forensic data collection/recording, etc.) delivered to forestry volunteers in Protected Areas (30 trainees); training on One Health approach organized for the selected staff of the Protected Area Teams (PAT); Subject matter experts supported in mentoring/feedback role; monthly meetings with PAT and OHT; and 3 workshops for PAT to increase their knowledge and skills on smart patrolling, use of GPS & digital cameras and disease surveillance.

Justification for Year 3 Support: The Ministry of Foreign Affairs, Lao PDR recently granted approval to proceed with this sub-activity. This sub-activity will enhance outbreak identification and response, disease reporting, disease surveillance, and appropriate sample collection in wildlife populations, and will address the need for rapid identification and response for emerging pandemic disease threats. This approach is consistent with the Lao PDR National Five Year Plan for EIDs and Public Health Preparedness, 2011-2015. The activity will also reflect a Lao PDR Government priority in trying to include, where possible, the 133 communities identified as the poorest in the country, many of which are located in remote areas and who are in need of improved surveillance and response capacity for disease outbreaks. This sub-activity will lead to strengthened linkages between the Forest Resource Conservation Division, DoF, NAHC, DLF and NEIDCO; increased surveillance for wildlife disease outbreaks in an initial PA, chosen by government agencies as a suitable site for a pilot training activity, with extension to other protected areas in successive years; strengthening the support for PA staff by training cadres of Forestry Volunteers; integration of Forestry Volunteers and PA staff into PA Teams and commune level first responder One Health teams; development and evaluation of a management structure for PA staff; strengthening and evaluation of disease reporting systems at the commune and PA level; monthly meetings to improve patrolling and disease monitoring capacity of PA teams; improved teamwork between human and animal health professionals, including those tasked with overseeing domestic animals and wildlife; estimation of the amount of wild game hunting in PAs and identification of the areas where wildlife products are being marketed; monitoring and evaluation of improvements to skills and knowledge of TOT participants and PA staff and volunteer teams attending workshops, with continuous improvement based on results of assessments.

Activity 3.4 (Linked to RESPOND Objective 3)

3.4.5 SE: Support training to strengthen One Health epidemiological teams at selected provincial, district, and village levels. In this initial pilot activity, RESPOND will carry out training activities involving district and provincial staff and selected community leaders from areas adjoining a Government-designated protected area (to be determined), where there is a high likelihood of wildlife and human/domestic animal contact. This training will include and encourage collaborative disease surveillance and outbreak response training of veterinarians and animal health workers (both domestic and wildlife), agriculture extension workers, physicians and other human health care workers, as well as other stakeholders.

- **EPT and other partners:** Sub-Awardee TBD; PREDICT, PREVENT
- **Results:** While the results are subject to adjustment due to ongoing discussions with stakeholders, expected results include: TOT workshop on outbreak response organized for government human

and animal health staff at provincial and district level; 4 (2 week paired) workshops on One Health approach conducted for the selected commune-level One-Health Team (OHT) staff (approximately 70 participants); final TOT workshop conducted for provincial and district officials to review and evaluate the outbreak response system and develop lessons learned.

Justification for Year 3 Support: In the third quarter of Year 2, USAID reached agreement with the Lao PDR government that EPT partner activities could proceed under existing agreements. RESPOND is in the process of developing a grant with an NGO with training and capacity building experience in Lao PDR to assist with project implementation. Initial implementation of field activities is expected to begin in Year 3, after discussions with Lao PDR government partners and USAID, and after awarding of the grant to the implementing agency. This sub-activity will lead to increased scope of short-term applied epidemiology, One Health and outbreak response in-service training to provincial and district-level staff responsible for outbreaks in multiple provinces in Lao PDR; improved quality of training materials and methods; improved training to safely collect and transport appropriate samples as required, to determine the cause of disease outbreaks; education of local community representatives (Community Level First Responders) to report, and respond appropriately, to suspected infectious and zoonotic disease outbreaks; improved collaboration between animal and human health agencies at all levels in Lao PDR in the areas of outbreak response, disease reporting etc, and increased awareness of international health agency priorities (e.g., WHO's IHR); and evaluation of improvements to skills and knowledge focused on the training of participants, and trainees attending workshops.

COUNTRY ACTIVITIES—INDONESIA

LOW 3.1 Strengthen human and organizational capacity to improve outbreak response

Activity 3.4 (Linked to RESPOND Objective 3)

3.4.1 SE: District and Provincial Zoonotic Disease Outbreak Response Training, Indonesia.

Indonesia has been at the forefront of HPAI control efforts during the last decade and as a result has undergone significant changes to the organization of its veterinary and human health services. One of the success stories of the long campaign against HPAI has been the development, in partnership with FAO, of the Participatory Disease Surveillance and Response Network (PDSR), teams of veterinary officers trained to interact with communities throughout the country to identify and respond rapidly to new outbreaks of disease in poultry and the District Surveillance Officer (DSO) network to interact with human communities during AI outbreaks. The Government of Indonesia and FAO have been considering expanding the role of the PDSR and DSO teams to include other diseases of national importance, including a number of priority zoonoses. Further training of PDSR and DSO staff is essential, and would include subjects such as epidemiology, disease investigation, surveillance and control of priority zoonotic diseases. In order to further strengthen links between PDSR and DSO teams, both groups need to be trained together in these subjects, with the aim of developing a rapid, coordinated, One Health approach for response to future diseases affecting both humans and animals.

Activities in Year 3 will support the newly established National Committee on Zoonosis and Communicable Diseases, replacing the now-dissolved National Committee for Avian Flu Control and Pandemic Preparedness (KOMNAS FBPI), which was constituted to control HPAI. Specific

information on these activities will be determined after further discussions with USAID and government stakeholders.

- **EPT and other partners:** Sub-Awardee TBD
- **Results:** While the results are subject to adjustment due to ongoing discussions with stakeholders, expected results include: development of modified PDSR (Participatory Disease Surveillance and Response) training curriculum and materials to include zoonotic and EID; TOT on disease surveillance, outbreak response and participatory training methodologies delivered to Master Trainers selected from MoA and MoH; pilot training workshops for selected PDSR teams and DSOs (District Surveillance Officers) to increase their knowledge and skills about One Health, epidemiology, disease surveillance and outbreak response to zoonotic diseases.

Justification for Year 3 Support: Indonesia is an EPT priority country and is therefore a major focus for the EPT program to strengthen emerging infectious diseases outbreak response capacity. This activity brings together for the purposes of joint training, PDSR and DSO officers from MoA and MoH. As these officers number in the thousands and are located country-wide at the district and provincial levels, this activity provides substantial support for increasing the linkages between animal and human health professionals. The focus of this activity is on joint outbreak investigation and response, and because it is country-wide, the activity is anticipated to lead to vastly improved national capacity to respond to outbreaks of emerging infectious diseases with particular emphasis on zoonoses. By supporting the newly created National Committee on Zoonosis and Communicable Diseases, funds will be directed at priority activities in this area. Support for this sub-activity will lead to increased scope of applied epidemiology, One Health and outbreak response in-service training to provincial and district-level MOA and MOH staff responsible for investigating and responding to zoonotic and emerging infectious disease outbreaks in Indonesia; improved quality of training materials and methods, based on monitoring and evaluation, and collaborative efforts to strengthen course effectiveness; improved capacity to safely collect and transport appropriate samples as required, to determine the cause of disease outbreaks; and improved collaboration between animal and human health agencies at all levels in the areas of outbreak response, disease reporting and disease control, and an increased awareness of international health agency priorities.

IMPLEMENTATION PLAN – GLOBAL

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 July 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.1.4 GL	Develop EPT program-wide definition of One Health core competencies.	Global	Tufts	Published, internationally accepted core competencies; stakeholder implementation workshops					
3.1	1.2.4 GL	Network Organizational Development	Global	TRG	Network governance framework developed and supported.					
3.2	2.2.1 GL	Develop best management practice recommendations for extractive industries based on PREDICT-identified vectors in hot spot regions.	Global	E&E	Best management practices (BMPs) developed and communicated					
3.2	3.1.2 GL	Government Innovations Supporting Disease Surveillance and Response	Global	DAI	Advocacy package developed; tech officer supports partners/states; country reps attend 2011 WHO/OIE/FAO mtg.; One Health policy roadmap developed; conduct/evaluate natl-level outbreak simulations; IHR adopted by stakeholders					
3.2	3.2.0 GL	Support to facilitate and improve the response to outbreaks of potentially zoonotic disease in hot spot regions.	Global	DAI	Training, technical, logistical, material and communications support provided					
3.2	3.3.1 GL	Pro-Med Mail	Global	Tufts	Increased awareness/use of disease outbreak info and reporting sources via training					

IMPLEMENTATION PLAN – BY REGION

EAST CONGO BASIN—REGIONAL

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.2.3 EC	OHCEA Workplan (8/11-9/12)	East Congo Regional	UMN	Curriculum and modules reviewed/developed; Field trainings; Increased participation					
3.1	1.2.4 EC	OHCEA Network Development	East Congo Regional	UMN	Network governance framework (e.g., operations, communication) implemented; Secretariat and member capacity developed/strengthened to manage; One Health professional development plan created; IT capabilities assessed; institutional quality assurance and One Health workshops implemented; mentoring program developed; membership expansion advocated; gender equality concepts promoted					
3.1	1.2.5 EC	OHCEA Partner Innovations	East Congo Regional	UMN	Innovative pilot programs identified and 2 developed/evaluated; network university partnerships/linkages strengthened; increased understanding of/experience with One Health concepts/approaches; successful activities replicated across region					

WEST CONGO BASIN—REGIONAL

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3	
Outbreak Response Capacity Building											
3.1	1.2.1 WC	Through a One Health Alliance, conduct twinning and mentoring with universities and vocational schools.	West Congo Regional	Tufts	Skill gaps identified,, improved field experience, teaching capacity and research capabilities for junior faculty. New fields of study and career path identified; Mentor and faculty exchanges occur. (with at least 6 junior faculty); University exchange visits; Gender issues documented.; Institutional research workshop (20-30 participants) conducted; Improved communication and infrastructure.						
3.1	1.3.1 WC	Support regional and international exchanges of personnel to improve outbreak response and control – Develop an actionable plan to strengthen and enhance ongoing career path development in the DRC	West Congo Regional	UMN	Regional conference (120 participants) of professional associations held; communication mechanisms and in-service training program established; situation analysis completed/disseminated.						
3.1	1.5.1 WC	Conduct professional continuing education through didactic and field workshops using the Wildlife Investigation and Livestock Disease (WILD) module.	West Congo Regional	Tufts	Workshops (25-30 ministerial staff each) conducted in 2 EPT countries; Support wildlife expert position in AU-IBAR; Wildlife Health Specialist Group established.						
3.1	1.5.5 WC	Support the MENTOR-FOREST program focused on extractive industry issues by adding One Health content and supporting fellows and a mentor from Gabon and Republic of Congo	West Congo Regional	DAI	Curriculum module and associated materials developed; Health related field practical exercise component developed; One fellow and one mentor are supported.						

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3	
3.1	3.1.1WC	Strengthen systems for disease surveillance, outbreak investigation and response with a One Health approach and response.	West Congo Regional	Tufts	Gap analysis completed; strategy to strengthen coordination mechanisms is developed, validated, and adopted in Cameroon via 3 national workshops (30 attendees each); collaborative tools elaborated and adopted.						
3.1	3.4.4WC	Outbreak response training for multi-disciplinary teams at national and sub-national levels, including training of front line health workers in outbreak response	West Congo Regional	Tufts	28 ministry personnel trained; SOP for outbreak investigation and response developed; continuing education program developed for ministries; PE manual translated and pre-tested in French; AFENET capacity improved to train professionals in PE and participatory impact assessment (PIA)						

SOUTHEAST ASIA—REGIONAL

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.2.1 SE	Through a One Health Alliance, plan and implement university twinning program	Southeast Asia Regional	UMN	Network coordinating office, operating plan, secretariat and country coordinating committees established; regional forum to create 10-year vision and mission held; priority RESPOND-OHSEA activities underway.					
3.1	1.2.2 SE	Support relationship between Khon Kaen Veterinary Medical School (VMKKU) and the Faculty of Agriculture, Nabong Agricultural College (NAC) campus, National University of Laos (NUOL)	Southeast Asia Regional	Tufts	Training courses designed, organized and delivered (10 participants); training of 50 students from NAC/NUOL by staff from VMKKU initiated; 25 students trained on lab practice; 2 VMKKU professionals in tech exchange with Tufts; 2 Master program enrollees; 3 Certificate program enrollees					
3.2	2.4.4 SE	Support for TEPHINET to host global conference and add One Health sessions	Southeast Asia Regional	Tufts	Organization and delivery of 6 pre-conference short courses, with 30 participants each; 4 plenary speakers deliver papers at the conference; scholarships for up to 100 FET students to attend and deliver oral presentations.					

IMPLEMENTATION PLAN – BY COUNTRY

UGANDA

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3	
Outbreak Response Capacity Building											
3.1	1.5.4 EC	Residency based knowledge partnership model for building veterinary public health competence in Uganda	Uganda	UMN	VPH residency program established, 1 faculty and 1 student trained at UMN; faculty/student mentorship exchanges occur;						
3.2	3.2.0.4 EC	Strengthen surveillance, reporting and diagnostic capacity to Improve Early Detection, Diagnosis & Response to Disease Outbreaks in Humans, Livestock and Wildlife	Uganda	DAI	Vets (5) begin training in VPM; district-level training (30); Tech Advisor & Lab Advisor staffed in govt.						
3.2	3.2.0.5 EC	Extractive industries outbreak response training	Uganda	DAI	Needs assessment conducted; Curriculum/materials developed; Master Trainers (20) trained; Peer Educators (200) trained						
3.2	3.2.2 EC	Hold a series of district, national and regional meetings and workshops to identify needs and initiate the development of a prioritized plan for outbreak response	Uganda	Tufts	Vets(5) conclude training ; PE manual developed; PE trained AFENET staff (20); M&E training & tool development; Secretariat management and mentoring skill building						

DRC

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.2.3 WC	Upgrade the skills of faculty at Institut Supérieur de Techniques Médicales, Institut Technique Agricole et Vétérinaire, and Institut d'Enseignement Médicale / Institut Techniques Médicale	DRC	UMN	One Health competency-based curriculum and modules developed; 10 national master trainers trained; materials provided for pilot schools					
3.1	3.4.1WC	Deliver refresher outbreak response training to rural medical personnel and first-responder training to communities in the USAID-CARPE Salonga-Lukenie-Sankuru Landscape region	DRC	Tufts	Health education and community outreach in 25-30 villages; 6 community educators trained; Provision of communications and transport equipment to ministries.					
3.2	4.1.2 WC	Evaluate existing Knowledge Management Systems needs for the health sciences, their application and use in the university context, and support the improvement and integration of appropriate systems	DRC	Tufts	30 TUSK users trained; University and government services are linked for intranet use. TUSK user community supported.					

THAILAND

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.5.2 SE	Applied field training for wildlife veterinary medical officers and field pathologists	Southeast Asia Regional	UMN	One workshop with 15 DNP trainees completed.					
3.1	1.5.5 SE	Master's Degree Program for Human & Animal Health Professionals at Thailand's Field Epidemiology Training Program (FETP/FETP-V) and International FETP	Thailand	DAI	Support 7 students enrolled in a university Masters program					
3.2	3.4.4 SE	Support training to strengthen One Health epidemiological teams at provincial and district levels.	Thailand	DAI	TOT workshop conducted for 30 trainers; short-term training courses delivered in 5 provinces (50 trainees); mentoring and monitoring provided for field projects; Review and improvement of existing training materials; Improvement of training and coursework					

CAMBODIA

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.2	3.4.7 SE	Support training to strengthen One Health epidemiological teams at provincial and district levels.	Cambodia	UMN	Modified FETP development for Cambodia; AET program for 25-30 students; TOT workshop conducted; 3 workshops (100 participants each) for MoH and MAFF staff; Rapid Response Team members supported for outbreak investigation					

VIETNAM

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	3.4.2 SE	Strengthen One Health epidemiological teams with focus on Applied Veterinary Epidemiology Training (AVET) Program training at selected provincial, district, and community levels	Vietnam	DAI	TOT for 20 trainers, 3 regional workshops for 20 trainees each; 2-3 month field activities; final experience sharing workshop (90 participants)					

LAO PDR

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3
Outbreak Response Capacity Building										
3.1	1.5.6 SE	Monitoring and disease surveillance training for Department of Forestry Protected Area (PA) staff and Forestry Volunteers in Lao PDR	Laos	DAI	TOT for district/provincial staff; forestry volunteer PAT training (30 participants); One Health training; mentoring; monthly meetings; 3 PAT workshops					
3.1	3.4.5 SE	Support training to strengthen One Health epidemiological teams at provincial and district levels.	Laos	DAI	TOT workshop for province/district; 4 One Health workshops (70 participants); Final TOT workshop to review/evaluate					

INDONESIA

LOW	Sub-Activity #	Activities by LOW	Location	Who is Responsible? ¹	Expected results 1 August 2011 - 30 September 2012	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3	
Outbreak Response Capacity Building											
3.1	3.4.1 SE	Support training to strengthen One Health epidemiological teams at provincial and district levels.	Indonesia	Tufts	Modified PDSR training curriculum/materials developed; TOT for Master Trainers; pilot training workshops						

PROJECT MANAGEMENT

ORGANIZATIONAL RELATIONSHIPS

Led by DAI, one of USAID’s largest contractors, RESPOND provides comprehensive outbreak response capacity building and outbreak response support by leveraging the wide range of skills and knowledge brought by our team:

- **DAI** leverages 40 Years of USAID project experience to provide top-quality management, operations, and recruitment resources to RESPOND. This experience is bolstered by DAI’s technical expertise in zoonotic disease surveillance and response, private-sector engagement, and capacity building.
- **The University of Minnesota** unites the full spectrum of health sciences—including human and veterinary medicine, nursing, public health, dentistry, and pharmacy—in the Academic Health Center. This institutional commitment to cross-disciplinary collaboration extends beyond the university into partnerships with industry, government, intergovernmental, and nonprofit sectors.
- **Tufts University** is a global leader in developing and implementing educational, research, and service initiatives to support One Health. The Cummings School of Veterinary Medicine was founded on the principle of One Medicine, and established the first DVM-MPH program and the first MS in conservation medicine in the United States.
- **Training Resources Group** is a leader in designing and facilitating adult learning and field drill programs in a wide range of technical and cultural contexts. Expert personnel participate in curriculum development at all training levels, ensuring that the most appropriate and effective instructional design and delivery methods are used.
- **Ecology and Environment, Inc.** specializes in working with extractive industry to address public health concerns arising from the interface of humans, animals, and rapid environmental change in remote areas.

Table 2, below, outlines the roles of each of our partners on RESPOND.

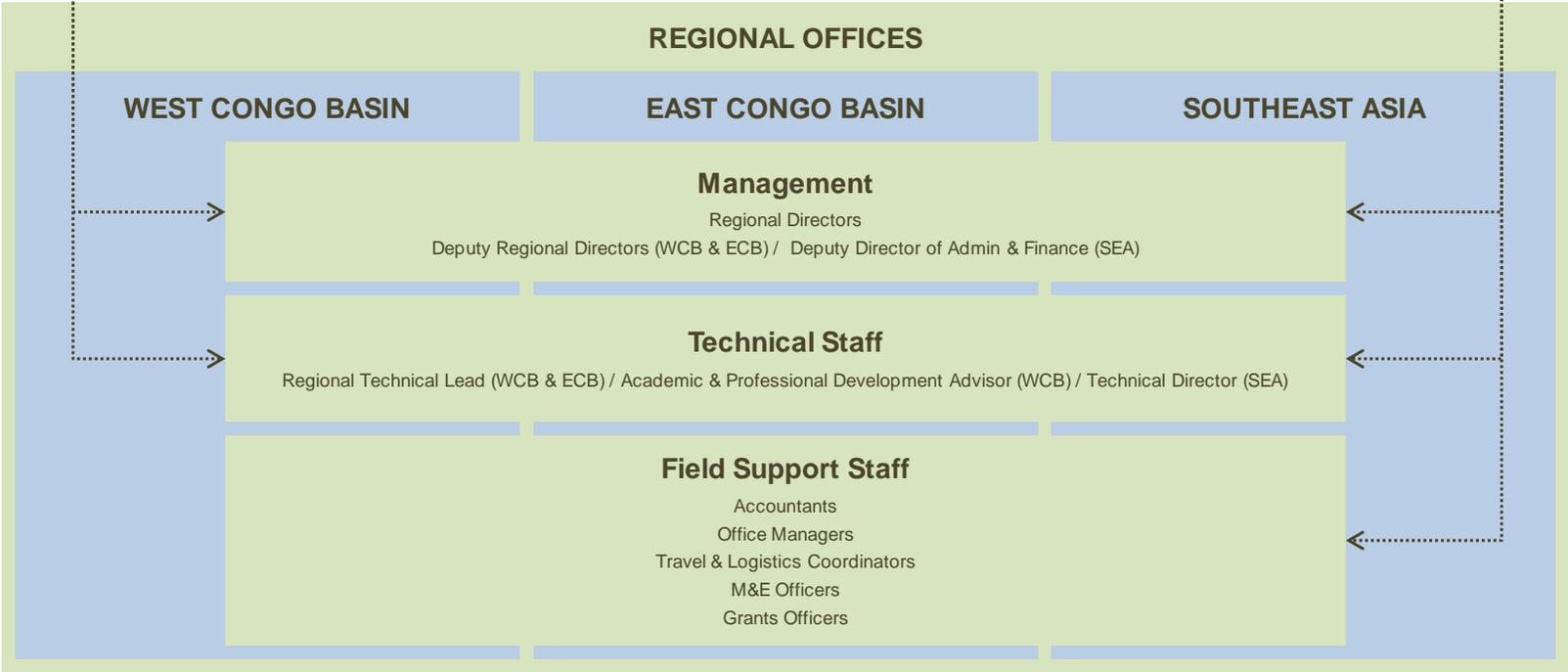
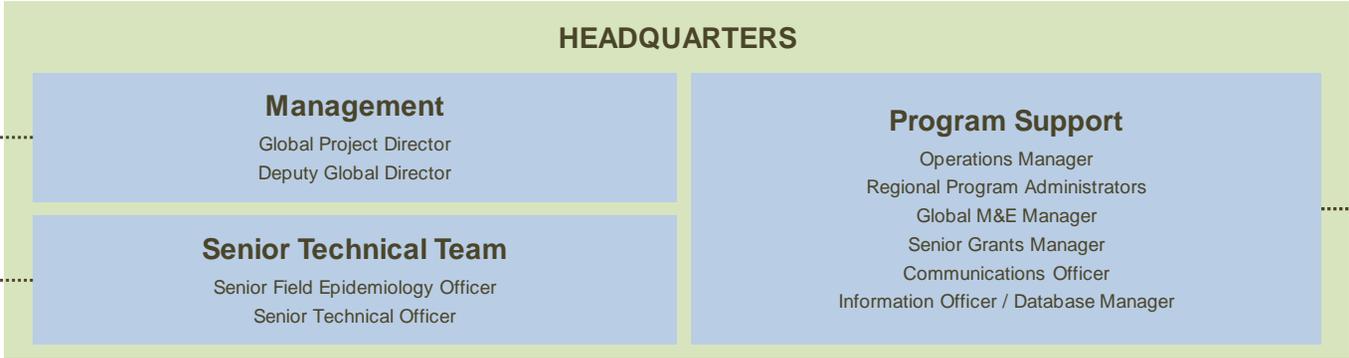
Table 2: RESPOND Partners

Partner	Role on RESPOND
DAI	Lead firm with direct responsibility to USAID Technical and management oversight of all offices and activities Partner coordination Communications and reporting Monitoring and evaluation Short-term training Finance and administration
University of Minnesota	Institutional capacity building of local university partners using UMN One Health model Technical leadership of West Congo Basin regional cross-disciplinary teams Curriculum development, training delivery, incorporation of public health components Digital learning platforms

Partner	Role on RESPOND
	Ministry leadership and preparedness training and partnership building Public-private partnerships Monitoring and evaluation
Tufts University	Institutional capacity building at local university partners based on PDSR and Veterinary Medicine School Technical leadership of East Congo Basin, and Southeast Asia regional cross-disciplinary teams Curriculum co-development, training delivery, incorporation of wildlife health components, including Tufts University Sciences Knowledgebase (TUSK) curriculum co-development platform Monitoring and Evaluation
Training Resources Group, Inc.	Organizational development of regional One Health networks Short-term training facilitation, in support of all team members and regional university partners Field drill, simulation and training course material design and delivery
Ecology and Environment, Inc.	Outbreak response technical assistance Partnerships with extractive industries

RESPOND OFFICES AND MANAGEMENT STRUCTURE

RESPOND is designed and managed to be responsive to USAID and our regional and national partners. The project is structured to provide the management and administrative support necessary to run a flexible and cost-effective program. The DAI team’s organizational structure builds on our combined lessons learned over decades of running complex, multi-country, multi-partner programs. RESPOND is based in Bethesda, Maryland, USA, with regional offices in Kinshasa, Kampala, and Bangkok. Each regional office is managed by a senior DAI manager and a senior technical advisor from either the University of Minnesota (UMN) or Tufts University. Each regional office is also capable of delivering country- and disease-specific services as needed. Experts from UMN, Tufts, Training Resources Group, Inc. (TRG), and RESPOND partner universities, support the hubs with technical assistance. Figure 4, below, details RESPOND’s overall management structure.



REGIONAL OFFICES

RESPOND operates through a set of regional offices with programmatic and operational support being provided by US-based partners and a headquarters office in Bethesda, MD. The regional offices, in turn, extend operational and programmatic support to a number of surrounding countries. By having a presence in each region, sets of regionally focused materials, and networks of local collaborating institutions and professional connections, all supported by DAI’s underlying institutional management capacity, the team can readily move into any nearby country to provide technical support and/or capacity building on short notice. This model allows us to scale up or scale down in any given region as needed. Specifically, the regional offices:

- Provide operational and logistical support in their respective regions;
- Coordinate and manage technical activities;
- Manage each regional grants program;
- Oversee communications, reporting and management information system; and
- Identify and source appropriate technical assistance.

During Year 2, RESPOND’s regional offices completed staff recruitment, and began technical implementation in each region. A full list of countries and activities to be undertaken in Year Three can be found in each respective regional section of this workplan. Figures 5-7, below, detail the staff and technical advisors that support each regional office and the RESPOND headquarters office.

Figure 5: RESPOND East Congo Basin Office Organizational Chart

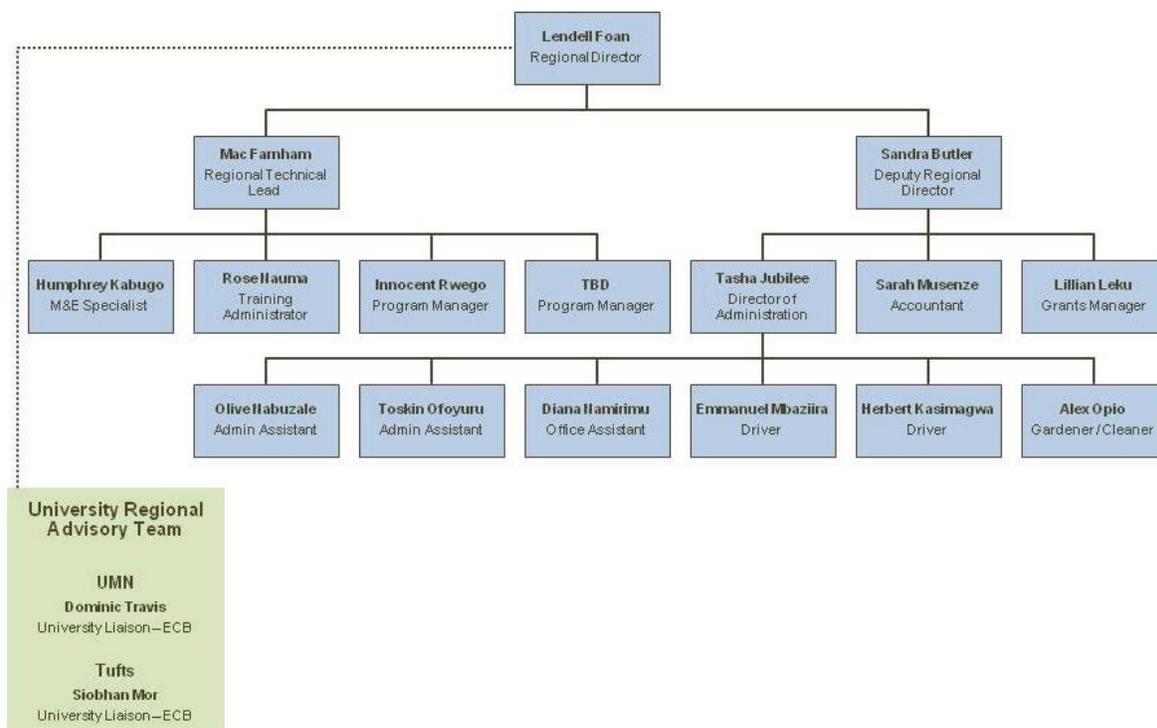


Figure 6: RESPOND West Congo Basin Office Organizational Chart

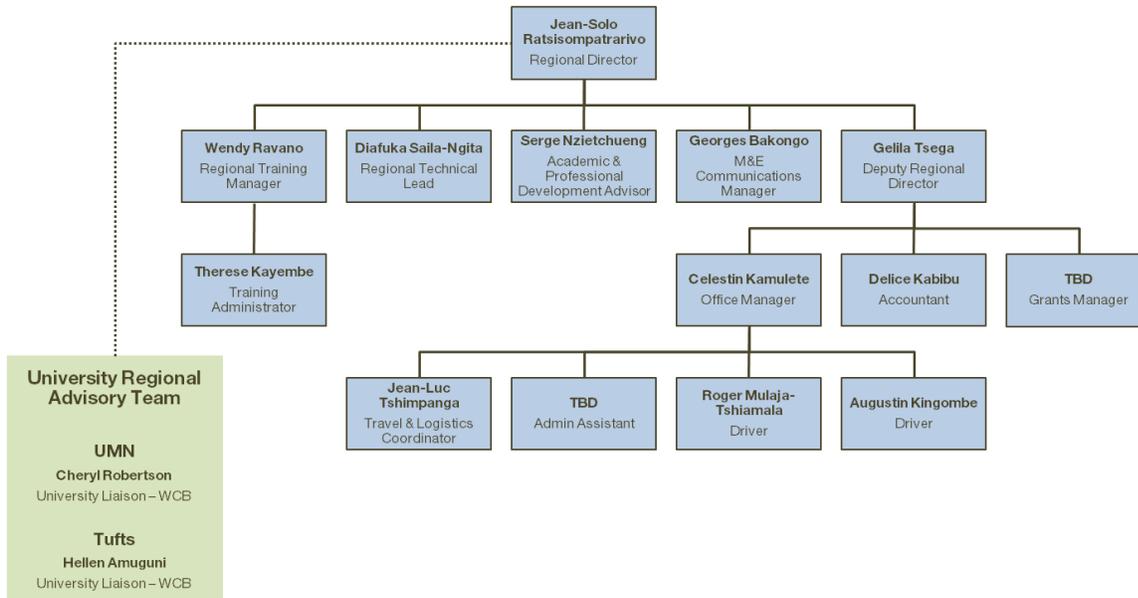
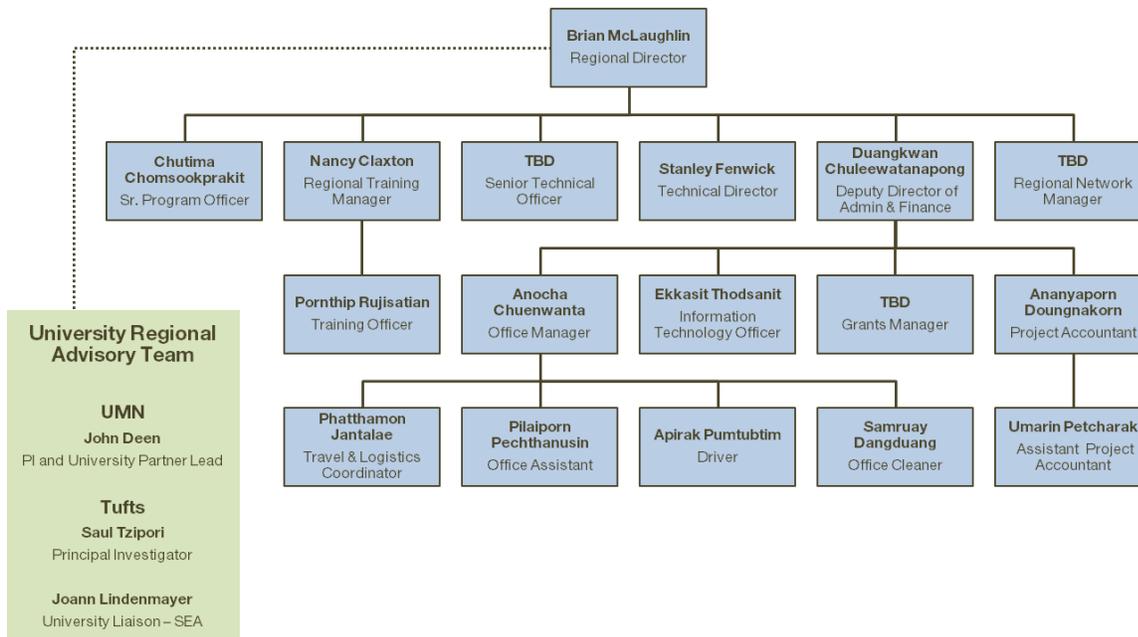


Figure 7: RESPOND Southeast Asia Office Organizational Chart

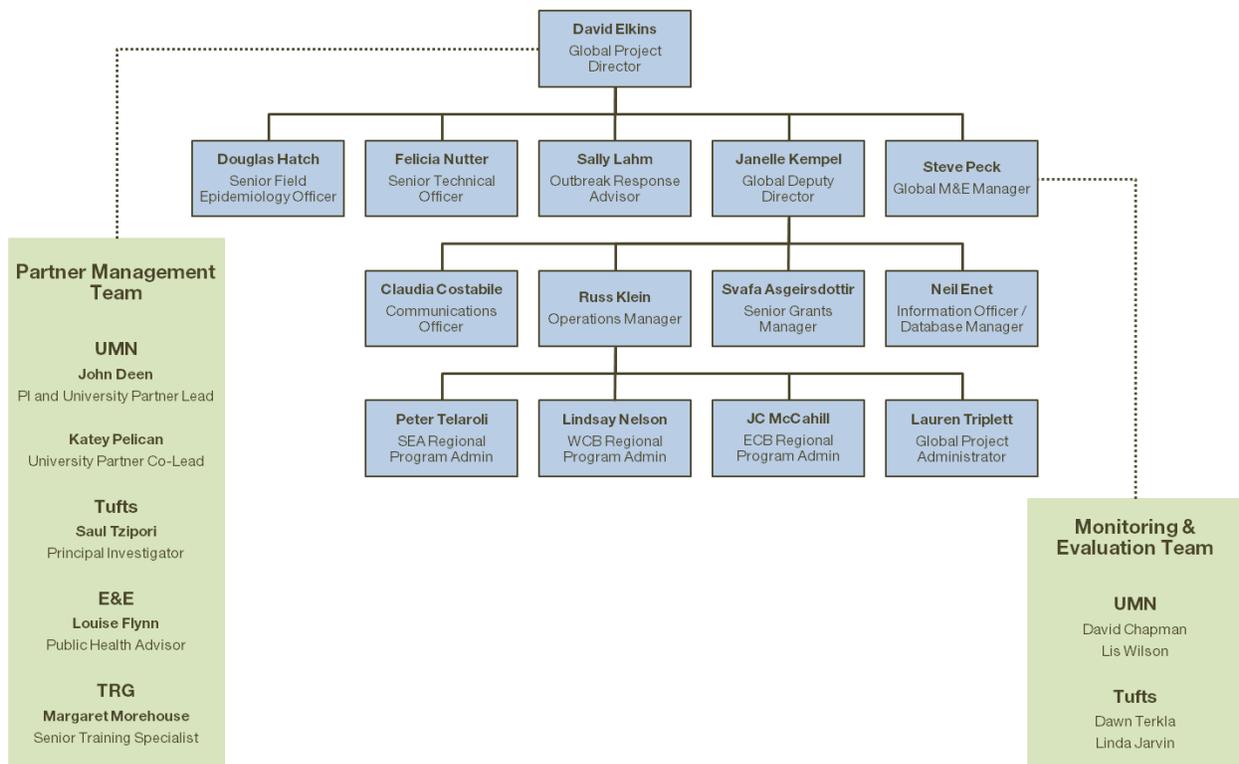


HEADQUARTERS OFFICE

RESPOND’s headquarters office supports both the technical and operational efforts of the project. Our four Key Personnel support RESPOND’s implementation in the following ways: The Project Director, while based in the US, not only oversees the core staff at RESPOND headquarters, but also provides consistent support to the Regional Directors and serves as a liaison between RESPOND and USAID/Washington. The Deputy Director supervises all subcontractors, grants, communications and operations; and the Senior Technical Officer and Senior Field Epidemiology Officer provide technical backstopping and advisory services to the regional offices.

The RESPOND headquarters office also sets the guidelines and standards for project communication and operations, including a set of common standard operating procedures, a grants manual, and personnel policies and protocols for communicating with USAID that form the core platform from which the regional offices launch interventions. This model also allows for an easy, cost-effective flow of curriculum and training materials from the center to the regional offices, where they are adapted and tailored to the local context. Figure 8, below, details the organizational structure of RESPOND’s headquarters.

Figure 8: RESPOND Headquarters Organizational Chart



RESPOND SENIOR MANAGEMENT TEAM

The Senior Management Team (SMT), the key strategy and policy-making body of RESPOND, meets to review technical and implementation progress and assess need for course correction. In addition, the SMT meets on an as-needed basis to review proposed project activities which may be politically sensitive and have potential to affect the overall project and larger EPT program. The team is composed of all principal and associate partners as shown in Table 3 below.

Table 3: RESPOND Senior Management Team

Position	Name	Partner
Global Project Director	David Elkins	DAI
Global Deputy Director	Janelle Kempel	DAI
Principal Investigator	Saul Tzipori	Tufts
Principal and Co-Lead	John Deen	UMN
Co-Lead	Katey Pelican	UMN
Technical Lead, Ecology	Louise Flynn	E&E
Sr. Training Advisor	Margaret Morehouse	TRG

MANAGING OUTBREAK RESPONSE

For actual outbreaks of emerging infectious diseases, including zoonoses, RESPOND normally works in close cooperation with international health agencies (e.g. WHO, FAO/OIE, CDC), their regional or country offices (WHO-AFRO, CDC Uganda) as well as with the responsible authorities in the national governments where the suspected outbreak is initially reported. This collaboration includes communication and collaboration with EPT partners, universities and NGOs – but activities are under the direction of government authorities. The objective of close collaboration with international health agencies during outbreak response is to assure that RESPOND understands all background information available about the outbreak, the priority and transmissibility of the suspected disease, and assure that EPT activities are consistent with International Health Regulations (IHR) and other guidelines.

Our work with responsible government officials in country, including with the Ministry of Health, Ministry of Agriculture and/or Wildlife Agencies, and any national task force organized with multiple ministries to coordinate response to the outbreak is to confirm that RESPOND is working at the invitation of the national government, reassure officials that the project understands the legal authority for response rests with the national government, and also guarantees that any support proposed or being provided (technical, logistical, or material/equipment) is done at the invitation of the government and does not duplicate or overlap with responsibilities other groups have been tasked with supporting.

Outbreak Response Coordination

RESPOND is responsible for providing support for outbreak response when requested by government (and after receiving USAID approval) of countries participating in the EPT program, but the project is not responsible for leading or supervising the response to these outbreaks.

Managing outbreaks remains the legal authority of the national government; with the government receiving technical assistance (as required) from a wide host of subject matter experts (SMEs), including the following groups: staff of international health agencies, university faculty, NGOs, and project staff

(including RESPOND and EPT partners). Such advisors may work with national level authorities or at the sub-national level on outbreaks if responsibility is clearly delegated to support the outbreak response.

Such support by RESPOND could include supplies, equipment, petrol, per diem for outbreak teams (working with permission of government), technical assistance (using local or regional NGOs such as AFENET), or providing other SMEs with specific experience needed; for example, with specific diseases (viral hemorrhagic fever), with database management or analysis, or extensive outbreak experience). All support whether technical or logistical is coordinated carefully with the RESPOND regional office, working with national officials, international health officials, EPT partners, and NGOs.

Providing Technical Assistance for Improved Outbreak Response

In order to further enhance the ability of national government, international health agencies and the developing networks of universities (e.g. OHCEA, OHSEA) to work more closely together to build and strengthen outbreak response capacity in countries and regions, RESPOND has committed funding to place a EPT / RESPOND coordinator at WHO-AFRO in Brazzaville. This advisor will work under the supervision of WHO-AFRO officials, and will have a background of experience in both public health and disease outbreaks and disease surveillance. This position will work closely both with WHO-AFRO, Ministries of Health, Agriculture and Wildlife in countries participating in the EPT program. The position will also assist WHO-AFRO with the review of national emergency preparedness plans, outbreak coordination, and enhancing the functional link between the OHCEA university networks, the CCCs, and international health agencies in support of IDSR, IHR, and outbreak response capacity building by RESPOND in EPT countries located in the West Congo basin and East Africa.

During actual responses to outbreaks in Uganda during FY2011, RESPOND technical staff and at the regional office worked together closely with national health authorities, the WHO country representative responsible for epidemics and emergency response, WHO-AFRO advisors, CDC-Uganda staff and leadership, as well as with EPT partners (e.g. DELIVER, PREDICT, IDENTIFY and PREVENT) to determine needs and challenges that need to be addressed during outbreaks. Following discussions about unknown viral hemorrhagic fever in northern Uganda (yellow fever later diagnosed), discussions with the Ministry of Health, MAAIF, and EPT partners identified the need for rapidly supplying PPE to prevent disease transmission in hospitals and among teams conducting field investigations. This need was communicated to DELIVER, who rapidly shipped an adequate supply of PPE that was distributed to field locations in Uganda. Following the outbreak, EPT partners worked with national governments and WHO-AFRO to identify supplies in the regional stockpile that could be made available, an important first step in improving regional supply chain management and strengthening outbreak response capacity.

PARTNERSHIPS AT THE REGIONAL/COUNTRY LEVEL

As described previously, RESPOND coordinates closely with five different types of partners:

- **Regional and global governing bodies:** RESPOND strengthens collaboration with these regional organizations, and works collaboratively with WHO, FAO, OIE, CDC, AU-IBAR and other regional and global organizations to facilitate policy changes that positively affect the adoption of a One Health approach to outbreak response.
- **National and local governments:** RESPOND supports and strengthens inter-ministerial task forces and coordinating bodies, and provides technical assistance and training to government staff to improve communication, planning, and outbreak response.

- **Universities and vocational schools:** RESPOND will improve local universities’ capacity to deliver high quality curricula, working with all relevant government and international agencies to ensure that training is consistent with national, regional and international guidelines and priorities.
- **Private sector:** RESPOND works with PREVENT and PREDICT to develop nationally- and regionally-appropriate best management practice recommendations.
- **Other EPT partners:** RESPOND collaborates closely with the other projects in the Emerging Pandemic Threats Program; these partners include IDENTIFY, PREVENT, and PREDICT.

For more information on how we coordinate with specific partners in each region, please refer back to the narrative descriptions of sub-activities.

REPORTING

A number of forms of reporting are available to USAID Washington and Mission personnel to keep them informed of project progress. These take the form of weekly, monthly and quarterly communications. Table 4, below, outlines key messages, the host and audience of those messages and common forms of reporting to USAID.

Table 4: RESPOND Reports

Key Reports	Host/Initiator	Audience	Reporting Method
Weekly Progress reports	RESPOND Global Project Director, Deputy Project Director, and Regional Directors	RESPOND Agreement Officer Technical Representative	Weekly meetings in person, in Washington, DC, and Email
RESPOND Project Quarterly Reports	RESPOND Project Director and Regional Directors	USAID Washington, USAID in-country missions, EPT partners, CDC and other international health agencies.	Electronic and hard copy report
Briefings as requested by missions	RESPOND Regional Directors, accompanied by short-term technical assistance personnel	Country USAID missions	In person
Trip reports for domestic and international trips	RESPOND personnel	RESPOND Project Director or Regional Directors	Email
Success Stories	RESPOND Project Director and Regional Directors	USAID Washington, USAID in-country missions	Electronic copy
Invitations to press hearings, working group meetings, workshops, trainings, etc.	RESPOND Regional Directors	Point(s) of contact of each of the partners in the Emerging Pandemic Threats Program, USAID missions, CDC and other international health agencies.	Email or in person
Briefings about field-based activities, target audience groups, relevant stakeholders, grantees, etc.	Regional Director and the technical team	RESPOND headquarters technical team + short-term technical assistance providers visiting the region.	Technical team meetings (by phone)

Key Reports	Host/Initiator	Audience	Reporting Method
Informational briefings, coordination of activities, meetings, introductions, etc.	Regional Directors and the technical team	EPT projects or international health agencies	As requested
Requests for international travel, including a Scope of Work of the intended trip activities, expected results, and proposed travel itinerary.	RESPOND Operations Manager	RESPOND Agreement Officer Technical Representative / Program Assistant	Email, with advance notice of the desired departure day.

PROVISIONAL PERFORMANCE MONITORING PLAN

PROJECT OBJECTIVE	INDICATOR	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY
1,2,3,4	Number of trainees	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1, 2,3,4	Percent change in trainee knowledge (%)	Grantee or sub-activity technical lead provides data;; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Trainees using gained knowledge (%)	Assessment/survey conducted by M&E team	Annual	Steve Peck
1,2,3,4	Number of stakeholder meeting participants	Grantee or sub-activity technical lead provides data;; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Number of lecture/presentation participants	Grantee or sub-activity technical lead provides data;; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2, 3,4	Linkage assessment	Assessment/survey conducted by M&E team	Annual	Steve Peck
1	Number of milestones achieved for networks	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Number of networking/twinning/mentoring exchanges	Grantee or sub-activity technical lead provides data;; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Networking/twinning/mentoring objectives achieved (%)	Assessment/survey conducted by M&E team	Annual	Steve Peck

PROJECT OBJECTIVE	INDICATOR	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY
3	Number of procedural and structural improvements implemented for outbreak response capacity	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
3	Average time from first report (national level) of suspected disease to arrival of outbreak response teams	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
3	Percent of IDSR outbreak response steps completed (%)	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Event rating (4= excellent to 1=poor)	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Event helped expand/clarify One Health understanding	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
3	Campaign reach (estimate people)	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck
1,2,3,4	Number of RESPOND created/modified materials used	Grantee or sub-activity technical lead provides data; M&E/Information Officer enters into TAMIS	Quarterly	Steve Peck

ANNEX A: 2012 EXPECTED RESULTS

Table 5, below, details our expected results for Year 3 of the project (FY 2012). As new sub-activities are finalized in consultation with regional, country, and USAID stakeholders, these results will be updated as needed.

Table 5: RESPOND Year 3 Expected Results

PROJECT OBJECTIVE	PROJECT ACTIVITY	YEAR THREE EXPECTED RESULTS
1	1.1	Published, internationally accepted core competencies, stakeholder implementation workshops
	1.2	Network governance framework developed and supported, network coordinating office, operating plan, secretariat and country coordinating committees established, network governance framework (e.g., operations, communication) implemented, secretariat and member capacity developed/strengthened to manage network, improved communication and infrastructure, regional forum to create 10-year vision and mission held, One Health professional development plan created, IT capabilities assessed, membership expansion advocated, gender equality concepts promoted and documented, innovative pilot programs identified and 2 developed/evaluated, network university partnerships/linkages strengthened, increased understanding of/experience with One Health concepts/approaches, skill gaps identified, curriculum, training courses and modules reviewed/developed, improved field experience, teaching capacity and research capabilities for junior faculty, new fields of study and career path identified, mentoring program developed and mentor and faculty exchanges occur (with at least 8 faculty), university exchange visits. training courses delivered (10 participants); training of 75 university students through university exchanges, field training, 2 Master program enrollees; 3 Certificate program enrollees, 10 national master trainers trained, institutional research workshop (20-30 participants) conducted with each university in network, materials provided for pilot schools
	1.3	Regional conference (120 participants) of professional associations held, communication mechanisms and in-service training program established, situation analysis completed/disseminated.
	1.4	No expected results for Year Three
	1.5	Curriculum module and associated materials developed, health related field practical exercise component developed, VPH residency program established, 7 workshops (95 trainees total), faculty(1) and student (1) trained at UMN, support 7 students enrolled in a university Masters program, TOT for district/provincial staff, One Health training, mentoring (fellow (1) and mentor(1) are supported), faculty/student mentorship exchanges occur, monthly meetings, support wildlife expert position in AU-IBAR, Wildlife Health Specialist Group established,
2	2.1	No expected results for Year Three
	2.2	Best management practices (BMPs) developed and communicated
	2.3	No expected results for Year Three
	2.4	Organization and delivery of 6 pre-conference short courses, with 30 participants each, 4 plenary speakers deliver papers at the conference, scholarships for up to 100 FET students to attend and deliver oral presentations at conference
3	3.1	Advocacy package developed, tech officer supports partners/states, country reps attend 2011 WHO/OIE/FAO mtg., One Health policy roadmap developed, conduct/evaluate natl-level outbreak simulations, IHR adopted by stakeholders, gap analysis completed, strategy to strengthen coordination mechanisms is developed, validated, and adopted via 3 national

PROJECT OBJECTIVE	PROJECT ACTIVITY	YEAR THREE EXPECTED RESULTS
		workshops (30 attendees each), collaborative tools elaborated and adopted.
	3.2	Tech advisor & lab advisor staffed in govt., needs assessment conducted, curriculum/materials developed, veterinarians(5) trained in VPM, district-level training(30 trainees), master trainers (20) trained, peer educators (200) trained, PE manual developed; PE training (20 trainees), M&E training & tool development; secretariat mgt and mentoring skill building
	3.3	Increased awareness/use of disease outbreak info and reporting sources via training
	3.4	Continuing education program developed for ministries, review and improvement of existing training materials, improvement of training and coursework, modified FETP development, modified PDSR training curriculum/materials developed, pilot training workshops, PE manual translated and pre-tested in French, partner capacity improved to train professionals in PE and participatory impact assessment (PIA), AET program for 25-30 students, health education and community outreach in 25-30 villages, 6 community educators trained, 5 TOT workshop conducted for at least 50 trainers. short-term training courses delivered (50 trainees), 12 workshops (450 participants), mentoring and monitoring provided for field projects, support for trainee involvement in outbreak investigation, 2-3 month field activities, provision of communications and transport equipment to ministries, SOP for outbreak investigation and response developed;
	3.5	No expected results for Year Three
4	4.1	30 TUSK users trained, universities and government services are linked for intranet use, TUSK user community supported
	4.2	No expected results for Year Three
	4.3	No expected results for Year Three

ANNEX B: YEAR 3 CONCEPT NOTES

This annex includes concept notes for all new sub-activities, as well as updated concept notes for those sub-activities for which we have requested additional funding in Year 3. Table 6, below, summarizes the concept notes included in this annex.

Table 6: New and Updated Concept Notes

Sub-Activity #	Title	Type
1.1.4 GL	Develop- EPT program-wide definition of One Health core competencies	Existing
1.2.1 WC	Conduct twinning and mentoring with universities and vocational schools	Existing
1.2.4 EC	OHCEA Network Development	New
1.2.4 GL	Network Development	New
1.2.5 EC	OHCEA Innovative Partnerships	New
1.5.1 WC	Conduct professional continuing education through didactic and field workshops using the Wildlife Investigation and Livestock Disease (WILD) module	Existing
1.5.4 EC	Residency-based knowledge partnership model for building veterinary public health competence in Uganda	New
2.2.1 GL	Develop best management practice recommendations for extractive industries based on PREDICT-identified vectors in hot spot regions	Existing
3.2.0 GL	Outbreak response support for newly emerging epidemics	Existing
3.4.7 SE	Support training to strengthen One Health epidemiological teams at selected provincial and district levels in Cambodia	New

RESPOND Concept Paper

FY3 Additional Funding for an Existing Sub-activity

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.1.4 GL

Sub-activity name: Develop EPT program-wide definition of One Health core competencies

Partner lead: Tufts

Additional Funding Request:

Grantee: N/A

I. FY2 APPROVED CONCEPT PAPER:

Goal: Catalyze the effective and efficient practice of the One Health approach by defining competencies which, while building upon the foundation of multiple health-related disciplines, primarily seek to strengthen the relationships and interdependencies between those disciplines.

Summary:

In short, this sub-activity aims to:

- 1) Gain clarity and understanding about the utility of One Health core competencies in the EPT program.
- 2) Leverage existing competencies and competency models where possible, and develop new One Health competencies where needed.
- 3) Reach consensus among the EPT program partners about accepted One Health core competencies.
- 4) Document and distribute the One Health core competencies in countries where RESPOND works and with EPT partners.
- 5) Train mentors, trainers, supervisors, faculty and practitioners in the EPT program to evaluate and coach the performance of One Health learners according to One Health competencies;
- 6) Transfer skills by training mentors, trainers, supervisors, faculty and practitioners (Training of Trainers) of the EPT program in the US and implementing countries in the development and adaptation of One Health competencies.

Definition of Competencies:

Competencies are general descriptions of the performance of a certain role or job in an organization. Competencies are the knowledge, skills, abilities, personal characteristics and other “worker-based” factors that **help define a specific level of performance** under specified circumstances. Competencies clearly define the essential functions of a role or job, and form the foundation for curriculum development, capacity building and performance improvement.

Competencies are described in terms such that they can be measured. It's useful to compare competencies to job descriptions. Job descriptions typically list the tasks or functions and responsibilities for a role, whereas **competencies list the abilities needed to conduct those tasks or functions**. Consequently, competencies are often used as a basis for training by converting competencies to learning objectives. Those learning objectives are then used to design learning and instructional materials that not only impart information about certain topics

but ensure that learners gain the knowledge, skills, abilities, personal characteristics and other “worker-based” factors that allow them to achieve the desired performance of their job or role.

Background:

Health competencies have been developed by several groups and for a number of purposes, namely for use in government, academic institutions, public health and professional organizations. In the US, one of the earliest set of competencies was developed by the Public Health Foundation. Subsequently, the CDC developed a set of competencies designed to be achieved by Epidemic Intelligence Service (EIS) Officers. These competencies are designed to capture the skills and knowledge of individuals who, having been trained in the EIS, will assume mid to senior level positions in the US public health system, including leadership positions in state health departments. EIS officers are expected to have attained competencies in the three domains of epidemiologic process, communication and professionalism. Although these core competencies have remained essentially the same for many years, others have been added to reflect changing circumstances such as widespread use of computers. Underlying EIS competencies is the assumption that the graduate will enter a public health agency where sufficient human and technical resources are available to support conducting the ten essential public health services (EPHS). The EIS graduate occupies a specialized niche within the agency and typically has the luxury of being able to focus on the application of epidemiology to preventing and controlling public health problems.

Field Epidemiology Training Program (FETP) competencies are based on the EIS model, but are designed for delivery to individuals who will assume mid to senior level positions in public health systems in countries where epidemiologic resources and skills are often lacking. Although epidemiologic methods and communication also form the core of these competencies, additional competencies have been added to reflect the need for a broader range of skills among these trainees. The additional competencies include use of laboratory resources to support epidemiologic activities; managing field projects, staff and resources; application of simple tools for economic analysis; and training and mentoring public health professionals. These competencies do not presume the same range of resources as are available to EIS graduates. They reflect the fact that laboratory support of epidemiologic practice is often lacking, that resources are scarce and must be used efficiently, and that there is a great need to build human capacity in applied epidemiology by training and mentoring others.

Both EIS and FETP competencies are designed to be applied specifically to improving the health of human populations. Veterinary medical and PhD level graduates of EIS and FETP programs often seek professional employment in agencies other than human health which are dedicated to agriculture or the environment, agencies that support but are not dedicated solely to the health of human populations. For this reason, standard competencies should be adapted to the career choices of these graduates.

The Council on Linkages between Academic and Public Health Practice also developed core competencies for public health professionals that were designed for use by public health practitioners, employers, and educators. The Council of State and Territorial Epidemiologists (CSTE) and the CDC have applied these broad competencies to the work of epidemiologists in

governmental public health agencies, defining four tiers of responsibility -- entry-level, mid-level, supervisory, and senior scientist/researcher.

In summary, population health competencies have been designed with one objective in mind – the improvement of human health. RESPOND ascribes to the concept that human, animal and environmental/ecosystem health is irrevocably linked, and that the health of all three must be considered when identifying, investigating and responding to outbreaks of emerging and normative diseases with program and policy measures.

Furthermore, the current working definition of a public health system reveals that, whereas governmental agencies may constitute the system’s core, numerous other entities – the private sector, academic, the health sector, media, policy makers, and others – collectively support that system through the work they do. It stands to reason then, that population health can only be achieved by the collective action of stakeholders from multiple disciplines with a range of skills, working at all levels. The goal of RESPOND, with its emphasis on education and training of university students and community-level responders, can only be achieved by casting a broader competency net than currently exists.

Ensuring that the knowledge and skills of each discipline are applied to the practice of One Health requires that competencies reflect tasks/functions that encourage and support sharing of information, knowledge, data and skills, and collaboration to solve common challenges. As such, there may be a core group of competencies that are shared by all partners as well as more specific competencies that are shared by subgroups of partners.

Proposed implementation design:

Objective	Performance targets/indicators	Assumptions and risks
RESPOND will have catalyzed the development of a set of One Health core competencies;	Published and distributed One Health core competencies Competencies have been adopted and are in use in population health systems and population health practice	RESPOND receives adequate funding for this sub-activity. Agreement can be reached about the scope, approach and design of the sub-activity.
RESPOND will have catalyzed the development of tools to support competencies in the following ways: - the development of performance-based One Health training curricula with measurable objectives and targeted content delivery	A published and globally distributed set of tools.	RESPOND receives adequate funding for this sub-activity. Agreement can be reached about the scope, approach and

Objective	Performance targets/indicators	Assumptions and risks
<ul style="list-style-type: none"> - the review of existing population health training curricula of institutions of higher learning, in-service professional development training and/or community level training - the measurement and evaluation of the impact of One Health training courses and how they contribute to the desired One Health core competencies. - the training of mentors, trainers, supervisors and faculty to evaluate and coach the performance of students and other One Health learners - the training of mentors, trainers, supervisors, faculty and practitioners in the EPT program in the development and adaptation of One Health competencies that are useful to their own context. 		<p>design of the sub-activity.</p>
<p>One Health competencies will be used by EPT as a framework for developing education and training modules, courses and programs;</p>	<p>One Health competencies mentioned by name in the materials developed.</p>	<p>Willingness of EPT projects to use the One Health competencies.</p>
<p>One Health competencies will be used by EPT staff as a benchmark with which to measure effectiveness of One Health approach, e.g., in the development of career track positions, etc.</p>	<p>One Health competencies mentioned by name in the measurement tools used.</p>	<p>One Health competencies are accepted by RESPOND M&E staff.</p> <p>One Health competencies will continue to be used after RESPOND has ended.</p>

Proposed activities (within the allocated budget)

Activity	Check-in point
<ul style="list-style-type: none"> Present this sub-activity concept and proposed process to the RESPOND SMT and technical team (project HQ and regional technical teams) 	X
<ul style="list-style-type: none"> Determine the skills of team members needed 	
<ul style="list-style-type: none"> Invite, recruit, contract team members / clarify roles and responsibilities. 	
<ul style="list-style-type: none"> Define the scope of the competencies. Examples: <ol style="list-style-type: none"> for community-level, vs. in-service professional training vs. higher learning (or some combination of these) for disease surveillance and response for Public Health in general for the various disciplines that conform a One Health approach for the interdisciplinary collaboration of a One Health approach 	X
<ul style="list-style-type: none"> Determine the approach we'll use for defining the competencies. Examples: <ol style="list-style-type: none"> Skills Approach Life-skills Approach Competency based Approach Integrative Approach Interprofessional / Interdisciplinary Approach Bayesian methodologies 	X
<ul style="list-style-type: none"> Research existing resources (literature review) that match / fit the scope and approach defined above. 	
<ul style="list-style-type: none"> Draft initial One Health core competencies and tools 	X
<ul style="list-style-type: none"> Share first draft with the RESPOND regional offices + instructions for pilot testing 	
<ul style="list-style-type: none"> Conduct a first meeting to review, discuss, involve broader stakeholders 	
<ul style="list-style-type: none"> Refine and improve the One Health core competencies and tools 	X
<ul style="list-style-type: none"> Design a workshop / training with objective to involve broader stakeholder groups. 	
<ul style="list-style-type: none"> Pilot test the workshop / training internal to RESPOND. 	X
<ul style="list-style-type: none"> Obtain feedback and incorporate findings about the usefulness and appropriateness of the One Health core competencies and tools 	X
<ul style="list-style-type: none"> Finalize design of workshop / training 	
<ul style="list-style-type: none"> Deliver the workshop / training 	
<ul style="list-style-type: none"> Consider and integrate the lessons learned / feedback from workshop / training 	
<ul style="list-style-type: none"> Finalize One Health core competencies and tools 	

Activity	Check-in point
<ul style="list-style-type: none"> Publish and disseminate One Health core competencies and tool at international conferences and internationally recognized and relevant professional associations. 	

Proposed activities (which are considered necessary, and require additional budget allocations)

Activity	Check-in point
<ul style="list-style-type: none"> Design and develop a Training of Trainers (ToT) workshop or training course with the objective to teach One Health competency development, adaptation and evaluation 	X
<ul style="list-style-type: none"> Implement (deliver the ToT as a pilot test),, evaluate, and revise it 	X
<ul style="list-style-type: none"> Deliver the ToT workshop 	X
<ul style="list-style-type: none"> Finalize and distribute ToT curriculum 	X

II. FY3 NEW CONCEPT PAPER FOR ADDITIONAL FUNDING:

Introduction:

EPT and other Partners:

(Does the activity include working with other partners (e.g. EPT, AFENET etc). If so please write a few sentences to describe how you envision the roles of these partners.)

Africa only: (Any sub-activity in Africa, especially involving training, explain how this activity is being coordinated with OHCEA. USAID does not want us to do parallel activities and they want to make sure that we are supporting our cornerstone strategy. If the sub-activity does not link with OHCEA, please justify why not, and include options for developing future linkages)

The proposed activities support the One Health Competencies Team (which comprises EPT partners and is led by Tufts and TRG of RESPOND) to take final competencies “to the field,” first as a pilot project and then in final form. One Health competencies may vary somewhat by culture, therefore a “one-size fits all” approach may not be appropriate and roll-out activities are planned for both Central and East Africa and Southeast Asia. The intended audience for training comprises the following:

- individuals who will adopt and adapt One Health competencies for curriculum development at academic institutions and for in-service workshops,
- individuals who will supervise recipients of One Health education and training in professional positions at all levels of government,
- individuals who will train future end-users of One Health competencies (senior administrators and faculty members at academic institutions, senior administrators and

supervisors at all levels of government in ministries of health, agriculture, environment and related agencies).

Goal:

Governments in Africa and Asia will effectively and efficiently prevent and control emerging infectious diseases, particularly zoonoses, by employing and supervising individuals whose education, training and job performance has been framed by culturally appropriate One Health competencies.

Objectives:

NB: These refer to two tiers of OH Competencies Implementation: ToT workshops delivered by EPT partners to small groups of trainers, and Implementation workshops delivered by trainers to end-users in academic and the public sector

1. By March 2012 finalize plans for implementation and evaluation of Tot workshops
2. By April 2012 finalize plans for delivery of Implementation workshops
3. By July 2010 deliver and evaluate output of Tot and Implementation workshops in Central and East Africa and Southeast Asia

Activities:

1. Hold two meetings with OHCEA (one in English, one in French) and one in Southeast Asia One Health Network focal persons and deans to solicit members' input on the proposed One Health Implementation and ToT workshops (content, intended audience, venues, timing), and revise plans for both types of sessions (January 2012)
2. Develop a Training-of-Trainers (ToT) workshop, pilot test it twice in Central and East Africa and once in Southeast Asia, and revise (March 2012)
3. Hold 1 to 2 ToT workshops each in Central and East Africa and Southeast Asia (May 2012)
4. Trainers will hold 2-3 Implementation workshops each in Central and East Africa and Southeast Asia (June 2012)
5. With in-country partners, develop evaluation plan to measure output, outcomes and impact of One Health Competencies

Expected Outcome:

- All institutional members of OH-CEA, and the Southeast Asia One Health Network, will have initiated activities required to implement One Health Competencies in their academic and in-service curricula;

The public sector in Central and East African and Southeast Asian countries will have initiated activities to develop new job descriptions, career tracks, or revise existing ones to incorporate One Health competencies.

RESPOND Concept Paper

FY3 Additional Funding for an Existing Sub-activity

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.2.1 WC

Sub-activity name: Conduct twinning and mentoring with universities and vocational schools

Partner lead: Tufts

Grantee: UNILU, UNIKIN, ISTM

III. FY2 APPROVED CONCEPT PAPER:

Introduction

One of RESPOND's mandates is to work with in-country partner educational institutions to improve their capacity to graduate competent health professionals. The majority of RESPOND's support to educational institutions is being directed through a partnership with One Health Central and Eastern Africa (OHCEA). Institutions of Higher Education in the DRC have lacked adequate funding for over two decades and this has and continues to impact negatively on the health sector. This specific sub-activity providing support to key institutions involved with health education in DRC will partially help to bridge the gap between DRC OHCEA member institutions and those in other member countries.

EPT and other Partners

This sub-activity will be implemented in concert with OCHEA activities and seek to build linkages with other relevant educational institutions in the region.

Goal

To increase the capacity of participating DRC educational institutions by:

Objectives

- 1) To strengthen institutional relationships between both relevant national institutions and regional institutions,
- 2) To build capacity of junior faculty,
- 3) To facilitate the design and preparation of programs leading to new career paths to address the needs for effective disease surveillance and outbreak investigation and response,
- 4) To conduct minor infrastructure repairs to existing buildings, and
- 5) To ensure that gender issues and gender equity are included in all aspects of the sub-activity.

Activities

- I. Develop collaborative relationships with government, NGOs and academic entities
 - a. Organize consensus meetings and information visits;
 - b. Provide communication means to male and female faculty and students to connect regularly with partner entities;

- c. Strengthen and expand relationships with regional institutions (e.g. SACIDS - Southern Africa Center for Infectious Disease Surveillance, South African's universities, HEALTH Alliance) within the framework of OHCEA.
2. Develop among male and female student and junior faculty leadership and professional skills, particularly updated teaching competencies:
 - a. Facilitate the pairing of male and female junior faculties (*Chefs de Travaux*) with male and female senior professors from RESPOND partners and regional universities to provide coaching opportunities to assure academic progress of junior faculties and the development of leadership skills to lead new programs;
 - b. Conduct institutional research (quality assurance) activities to strengthen collaboration between participating institutions (academic and development entities from the public and private sectors);
 - c. Support One Health related operations research supported by paired faculty with the participation of students under their supervision;
 - d. Facilitate junior faculty access to the Center for Enhancement of Learning and Teaching (CELT) and Training and Resource Group (TRG) resources.
3. Facilitate the establishment of programs leading to new career paths:
 - a. Visit partner universities with programs leading to new career paths of interest to DRC to learn from their experiences and assess opportunities for collaboration;
 - b. Assess the opportunity to develop new programs leading to new career paths of interest to DRC;
 - c. Facilitate the exchange of faculty between academic institutions.
4. Ensure that gender issues and gender equity are included in all aspects of the grant:
 - a. Endeavor to achieve gender balance in the identification of candidates,
 - b. Facilitate gender sensitive content in all material,
 - c. Support inclusion on gender awareness and gender specific research protocols
 - d. Strengthen access to technology to both male and female academics and students
5. Ensure access to internet services within basic work stations
 - a. Support access to internet service providers
 - b. Conduct minor repairs to key work areas

Expected Outcome

- a. High level officials (e.g. Deans) from the grantee institutions will have met in person with counterparts from participating universities;
- b. Exchange of faculty between universities has occurred;
- c. A report on the opportunity to establish at least one new program leading to a new career path related to outbreak investigation and response will have been produced;

- d. Reliable communication means have been made available to male and female faculty and students;
- e. Gender awareness and the impact of gender issues in the development of One Health programs will have been documented
- f. Male and female student and faculty have been able to access the internet daily, and interact with communities of practice and education across partnering academic institutions using tools such as TUSK;
- g. All male and female faculty teaching at grantee institutions have accessed resources available at Training and Resource Group (TRG) and Center for Enhancement of Learning and Teaching (CELT) in the development of their class materials, syllabus and curricula;
- h. Paired faculties have had opportunities to visit universities participating in the twinning program;
- i. Opportunities for collaboration with each university participating in the twinning program have been documented.

IV. FY3 NEW CONCEPT PAPER FOR ADDITIONAL FUNDING

Introduction:

One of RESPOND's mandates is to work with in-country partner educational institutions to improve their capacity to graduate competent health professionals. The majority of RESPOND's support to educational institutions is being directed through a partnership with One Health Central and Eastern Africa (OHCEA). Institutions of Higher Education in the DRC have lacked adequate funding for over two decades and this has and continues to impact negatively on the health sector. This specific sub-activity providing support to key institutions involved with health education in DRC will partially help to bridge the gap between DRC OHCEA member institutions and those in other member countries.

In Year 3 RESPOND will: 1) collaborate closely with the Ministry of Higher Education to identify One Health-related skill gaps in government ministries and identify ways to fill these gaps while providing new opportunities for career advancement for veterinarians and medical personnel; 2) continue the coaching process of junior faculty from participating schools, including providing more field work opportunities for outbreak response practice; and participation of junior faculty in short term (less than 6/12 months) training program in the United States and other countries within the region; 3) facilitate in-person meetings between mentors and paired junior faculty members from participating DRC schools through visits to the US or to DRC and participation in international conferences; 4) continue institutional relationship-building with partner institutions of OHCEA countries; 5) facilitate further meetings of academic and higher education officials from DRC with RESPOND university partner officials; 6) continue to build institutional research (quality assurance) capacity within academic institutions in DRC and the region

EPT and other Partners:

The majority of RESPOND's capacity building activities targeting educational institutions is directed through a partnership with One Health Central and Eastern Africa (OHCEA). This

activity will eventually be integrated into OHCEA work. This specific sub-activity will, in concert with OHCEA activities, build linkages with other relevant educational institutions in the region, and fund participating universities and vocational schools from the DRC improve their teaching and research capacity through mentorship and coaching by senior professors from RESPOND university partners and institutions from OHCEA countries. Further, it will help bridge the longstanding resource gap between DRC OHCEA member institutions and those in other member countries. For this sub-activity, RESPOND will leverage human resources available from PREDICT partners ([UC Davis](#), [GVFI](#), [Wildlife Conservation Society](#), and [EcoHealth Alliance](#)(¹) to provide faculty from DRC and the region for more coaching and mentoring opportunities.

Goal:

Under this sub-activity, junior faculty from DRC participating institutions will improve their teaching and research capacity through mentorship and coaching by senior professors from RESPOND and PREDICT university partners. Further, institutional relationships between DRC participating institutions and other OHCEA members will be enhanced in order to facilitate regional academic exchanges.

Objectives:

- 1) To strengthen institutional relationships between both relevant national and regional academic institutions.
- 2) To build capacity of junior faculty.
- 3) To facilitate the design and preparation of programs leading to new career paths to address the needs for effective disease surveillance and outbreak investigation and response.
- 4) To improve educational quality at academic institution in DRC and the region,.
- 5) To conduct minor infrastructure repairs to existing buildings.
- 6) Strengthen relationships between universities and government disease surveillance and response entities,.
- 7) To ensure that gender issues and gender equity are included in all aspects of the sub-activity.

Activities:

- 1) Continue institutional relationship building with partner universities (US and OHCEA).
- 2) Start the implementation process of developing new career fields in close collaboration with the Ministry of Higher Education.
- 3) Continue the coaching process of junior faculty from participating schools with more field work opportunities for outbreak response practice and participating in short term (less than 6/12 month long) training programs.
- 4) Facilitate meetings in person between mentors and paired junior faculties from DRC participating schools through visits to the US or to DRC and participation in international conferences;.
- 5) Build capacity in institutional research (quality assurance);).
- 6) Organize a consensus building workshop on One Health concept to further introduce the strategy in academic institutions;.
- 7) Facilitate collaboration between academia and government entities through meetings, workshops and working groups

Expected Outcome:

1. One Health-related skill gaps are identified and processes for establishing new fields of study to bridge the gap are initiated.
2. Programs leading to new career paths are initiated at UNILU and UNIKIN.
3. Paired junior faculty participants are exposed to more field experience and have improved their capacity to teach and conduct research.
4. Mechanisms are in place to facilitate collaboration between academia and government.
5. Institutional relationships are strengthened and expanded to include more schools in the region (e.g. Regional Public Health School –CIESPAC/Congo-, Ecole de Faune de Garoua and Université des Montagnes in Cameroon), and OHCEA member schools and EPT university partners.
6. Schools in DRC and Cameroon have been familiarized with institutional research method to implement quality assurance programs.
7. Gender awareness and the impact of gender issues in the development of One Health programs will have been documented

RESPOND Concept Paper
FY3 New Sub-activity Funding

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.2.4 EC

Sub-activity name: OHCEA Network Development

Partner lead: Tufts

Grantee: OHCEA

Introduction:

One Health Central and Eastern Africa (OHCEA) is a new partnership aimed at providing a conceptual home for One Health activities in the Congo Basin. The current OHCEA membership consists of Deans and faculty representing 14 Schools of Public Health and Veterinary Medicine in six countries — Democratic Republic of the Congo (DRC), Ethiopia, Kenya, Rwanda, Tanzania, and Uganda.

This concept note focuses on strengthening OHCEA member institutions, and their faculty, so that they are better able to participate in network activities and enhance and maintain the quality of their programs. In particular this sub-activity will support OHCEA member institutions as they revise and develop new curriculum, and improve their delivery of in-service and pre-service training. These activities will build on previously initiated activities, namely:

- TUSK: Prior to RESPOND, Tufts supported the installation of TUSK at Makerere University School of Public Health (Uganda), University of Nairobi (Kenya), and Muhimbili College of Health Sciences (Tanzania). In Y1 and Y2 RESPOND undertook assessments of IT infrastructure and human resources at Makerere University (Uganda), University of Kinshasa (DRC) and University of Lubumbashi (DRC). These assessments demonstrated high interest in expanding capacity for using technologies such as TUSK in the classroom. With Y2 RESPOND funding, new servers were installed and facilities upgraded in all three universities, and a new version of TUSK was rolled out at Makerere University along with user support training at both the School of Public Health and School of Veterinary Medicine. Further, in Y2 veterinary and public laboratories located in Kinshasa and Lubumbashi were connected to University of Lubumbashi (UNILU) and University of Kinshasa via the intranet. In Y3, TUSK will be implemented in DRC (*sub-activity 4.1.2 WC*) and additional assessments of IT infrastructure and human resources will be undertaken at remaining OHCEA countries in preparation for TUSK roll out (outlined below).
- Institutional quality assurance capacity building workshops: In Y2 RESPOND supported a workshop on quality assurance (QA) in two institutions: UNILU (Public Health and Veterinary Schools) and ISTM Lubumbashi, in the DRC (*sub-activity 1.2.1 WC*). The purpose of the workshop was to provide individuals at participating institutions with an understanding of institutional quality assurance, as well as provide training in appropriate QA techniques. The ultimate goal was to enable participating institutions to create an

Institutional QA office within their school/University. In Y3, these workshops will be adapted and implemented in each of the remaining countries in the OHCEA network (outlined below). The activities will also be expanded to include other veterinary schools, public health institutions and schools of nursing with the aim of developing common indicators across similar schools in each region.

EPT and other Partners:

OHCEA institutions

Goal:

To strengthen OHCEA member institutions, and their faculty, so that they are better able to participate in network activities, and enhance and maintain the quality of their programs.

Objectives:

1. To conduct an assessment of IT infrastructure and human resources at remaining OHCEA member institutions;
2. To develop an implementation plan for the roll out of TUSK and associated user support training at all institutions;
3. To adapt and implement a series of institutional quality assurance workshops in OHCEA member countries.

Activities:

Under this sub-activity RESPOND will:

1. Conduct an assessment of University IT infrastructure and human resources at OHCEA member institutions in Ethiopia, Kenya, Rwanda, and Tanzania in order to develop an implementation plan for the roll out TUSK and other educational technologies. These technologies will be used to support curriculum co-development, course content sharing and distance learning across the network.
2. Implement 3-day institutional quality assurance (QA) capacity building workshops in Ethiopia, Kenya, Rwanda, Tanzania and Uganda and 3-day follow up workshop in the DRC at the participating institutions. Workshops will be tailored to the country and involve relevant representatives from each OHCEA member institution (School of Public Health and School of Veterinary Medicine). The Minister for Higher Education will be invited as recommended by each country.

Expected Outcomes:

1. Plan for roll out of TUSK across OHCEA network based on institutional needs
2. OHCEA institutions with expanded capacity to undertake quality assurance activities.

RESPOND Concept Paper
FY3 New Sub-activity Funding

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.2.4 GL

Sub-activity name: Network Development

Partner lead: DAI

Grantee: N/A

Background

In order for a One Health philosophy to be firmly embedded in all levels of society, it is vital that concerted efforts are made to establish and maintain strong linkages between many different disciplines including, but not limited to public, veterinary and environmental health, the social sciences and others. Moving towards a One Health approach to investigate, respond to, and counter existing and future emerging infectious disease threats is the overarching goal of the EPT program. This requires commitment at the international, regional, national, and local levels. Therefore our strategy is to develop and support a regional One Health network based upon government and university partnerships. The network will leverage existing capacity to strengthen and sustain public health infrastructure and outbreak response capability, build upon the framework of existing linkages between government and universities throughout the region, and identify and respond to areas of One Health capacity-building need. RESPOND's consortium partners, University of Minnesota and Tufts University, will work together synergistically to provide technical support to the newly created university networks and its members.

RESPOND's vision involves "sustainable One Health university networks that will provide trained leadership, ongoing capacity building, and technical support to governments in the development and strengthening of a cross disciplinary, trans-boundary approach to emerging infectious disease outbreak response and surveillance in their respective regions." Our belief is that this will take ten years to achieve. It is essential to note that this vision needs to be endorsed and supported by the Deans of the network member universities and therefore this may be altered to reflect their views once the networked is formed and functional.

Introduction:

In year 2 RESPOND supported the establishment of two regional One Health University Networks—one in the Congo Basin and one in Southeast Asia, with work continuing in year 3. Development of robust university networks—able to effectively and efficiently pursue their programmatic missions—requires attention to the organizational development of the networks as well as to the work they are doing. Issues including network membership, governance and decision making, management, and communication must be worked through early in the life of the network in order to develop trust and foster collaboration amongst network members

In Year 3 RESPOND will further develop a framework for strengthening network development and activities. While the framework concept will be developed at the global level, implementation will be contextualized at the regional level. Activities will be designed to ensure common vision for the network across its member universities, to assure that governance

mechanisms are in place to support and to strengthen collaboration within the network and the link with the US-based partner universities. Activities may include assessment of and support to the network and its members and strengthening of individual universities and collective network program initiatives,

The networks will require continued support from RESPOND to develop further in year 3. The institutions that form the networks will be challenged to overcome disciplinary and professional restrictions and to establish innovative approaches to planning, modeling and implementing a cross-disciplinary cross-sectoral One Health Approach.

This concept note provides an overview of how the university networks will be developed and sustained as supported by RESPOND.

EPT and other Partners:

OHCEA, OHSEA

Goal:

Long-term organizational sustainability of regional One Health university networks to transform the workforce by developing One Health professionals.

Objectives:

1. Network governance mechanisms are established to ensure effective decision-making and communications within the network and amongst network members and at completing Respond project deliverables
2. Networks are able to support the interaction and collaboration among University partners both within and outside the network.
3. A foundation is laid to ensure network sustainability beyond the life of RESPOND.

Activities:

1. RESPOND and the networks develop a strategy for network development to meet identified needs of network members and USAID/RESPOND.
2. RESPOND regional offices and network leadership define a development plan aligned with the intersection of their respective needs.
3. RESPOND supports the establishment of governance structures with network leadership.
4. RESPOND supports network leadership to assure a network-wide understanding of these mechanisms, including how the network is intended to function, the services it is intended to provide to member universities, the roles, and tenure of network leadership and decision making authorities as among members and as between members and Secretariat.
5. RESPOND will work with network members to develop an Operations Manual and an external communication plan and such other documents as required to support their operations.
6. RESPOND will assist networks to develop and strengthen member and Secretariat capacity to conduct, administer and manage the network.

7. RESPOND will support the network to develop a vision and plan for the development of the One Health Professional, including but not limited to:
 - a. Facilitate a process to develop a shared vision of the one health professional and the systems required to ensure optimal performance.
 - b. Identify key variables needed to drive transformational change.
 - c. Plan for the development of that professional and transformation of the systems necessary to enable trained One Health workers.

Expected Outcomes:

1. Networks have established functional governance and management mechanisms;
2. Network members share a common vision and understanding of the roles of the networks, individual members and RESPOND.;
3. Network members are collaborating and communicating effectively;
4. Self-sustaining university networks whose members work collaboratively to develop One Health professionals across disciplines.

RESPOND Concept Paper
FY3 New Sub-activity Funding

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.2.5 EC

Sub-activity name: OHCEA Innovative Partnerships

Partner lead: DAI

Grantee: Individual OHCEA institutions TBD

Introduction:

RESPOND's approach to network development has three key components: (1) **network establishment** and initiation to move from concept to activity within the network (sub-activity 1.2.3 EC); (2) **organizational development** to create sustainable systems and partnerships (sub-activity 1.2.4 GL and 1.2.4 EC); and (3) this **Innovative Partnerships** component to identify, develop and leverage successful partnership models between RESPOND and individual or multiple OHCEA institutions supporting creative One Health activities which can be expanded or shared across the network.

Through this sub-activity, RESPOND university partners and individual and/or multiple OHCEA schools will work together to identify innovative programs and or ideas for programs that can be developed and expanded to operationalize One Health approaches and or concepts. To achieve this, RESPOND partner universities will work directly with OHCEA schools in each country to foster communication and collaboration across and between the human and animal health schools, identify innovative programs at each school, and share innovative models from across OHCEA and around the globe.

Innovative Partnerships help advance the OHCEA network through a combination of modeling One Health innovation and work for the network, fostering the cross-network partnerships and collaboration at the institution level and faculty level that are essential to network sustainability, and seeding the formation of innovative new programs that can then form the foundation for seeking further funding and providing longer-term sustainability beyond RESPOND.

EPT and other Partners:

OHCEA member schools, potential for partnering with other EPT programs, INGOs and networks

Goal:

Implement innovative One Health activities through grants and or direct assistance activities to universities in the OHCEA network.

Objectives:

- I. Work with OHCEA universities to identify innovative programs that will foster partnerships across disciplines and the network.

2. Administer grants and or direct assistance funds to pilot innovative One Health programs at OHCEA institutions.
3. Further strengthen One Health linkages between OHCEA network university personnel.

Activities:

1. US partner university faculty work with faculty at OHCEA partner universities to identify innovative training programs to pilot and or strengthen which incorporate an applied, cross-disciplinary approach.
2. Example pilot activities already discussed with OHCEA schools include;
 - a. Development of a combined nursing and veterinary field experience / field attachment
 - b. Development of a practical hands-on field pathology course module
 - c. Fostering faculty exchanges to put different disciplines together in a teaching format (eg. having vet or nurse provide lectures / courses on zoonotic disease at a school of public health)
 - d. Modular course co-development across RESPOND regions, including bi-lingual delivery and course materials
 - e. Development of a “global” MPH course / program
3. Evaluate Innovative Partnership programs mid-year to identify successes and areas for expansion to other schools and regions.

Expected Outcomes:

1. Improved linkages among OHCEA network universities;
2. At least two pilot innovative One Health programs involving cross-school, cross-university or cross- network partnerships are implemented.
3. Increased understanding of, and hands-on experience with One Health concepts and approaches;
4. Successful activities that can be replicated across the RESPOND regions.

RESPOND Concept Paper

FY3 Additional Funding for an Existing Sub-activity

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.5.1 WC

Sub-activity name: Conduct professional continuing education through didactic and field workshops using the Wildlife Investigation and Livestock Disease (WILD) module

Partner lead: Tufts

Grantee:

V. FY2 APPROVED CONCEPT PAPER:

Introduction:

The African Union InterAfrican Bureau for Animal Resources (AU-IBAR) is a specialized technical office with the mandate to support and coordinate the utilization of livestock, fisheries and wildlife as resources for both human wellbeing and economic development in the Member States of the African Union (AU). A major component of the AU-IBAR mandate is the control of transboundary animal diseases and zoonoses. AU-IBAR works at continental and regional levels, through the regional economic communities, and with other regional bodies as key partners. AU-IBAR has unique convening power, is a critical instrument for advocacy, and by facilitating transboundary and regional collaboration, has spearheaded the eradication of rinderpest from the continent.

Through the EU-funded Support Programme for Integrated National Action Plans against Avian and Human Influenza (SPINAP-AHI), which ended this year, AU-IBAR brought professionals from different sectors together in a One Health consistent approach. In the process, AU-IBAR identified the critical lack of wildlife health capacity on the continent, and recognized the need to further strengthen cross-border coordination for the prevention and control of disease. AU-IBAR is now working to strengthen the skills of wildlife health professionals in Africa, and supporting the development of an Integrated Regional Coordination Mechanism (IRCM) within the regional economic communities (RECs) to institutionalize disease prevention and control efforts.

To assist AU-IBAR in these efforts, RESPOND will provide support for the following activities:

- Adapt the Wildlife Investigation and Livestock Disease module (developed by FAO-EMPRES Wildlife Unit and the Zoological Society of London for the FETP-V Thailand) for regional use within Africa;
- Provide technical experts (regional as well as international experts e.g. Royal Veterinary College, RESPOND partners and subgrantees, and other interested stakeholders) to deliver the WILD training module and mentor trainees;
- Continue country specific manual, distance learning and curriculum development for the training, in collaboration with AU IBAR, country experts, RESPOND partners and subgrantees, and other interested stakeholders;
- Hold four WILD didactic training workshops, based in RECs, with at least three participants from each EPT target country in Africa;

- Integrate WILD trainees into wildlife health monitoring, disease surveillance, and research activities in EPT countries, to strengthen applied skills and knowledge, and with the primary objective of achieving capacity for long term wildlife health monitoring, disease surveillance, and outbreak investigation ;
- Provide partial support for the wildlife expert post in AU-IBAR for a limited period (propose one year renewable, depending on performance), with the primary role to coordinate and support WILD training and RESPOND EPT country engagement and implementation through the AU political and technical offices;
- Administer the WILD training logistics – identify and liaise with in-country participants, and handle politics, travel, per diems and official reporting of the outcomes of the meetings;
- Help develop a UNEP-IUCN Species Survival Commission Wildlife Health Specialist Group (WHO/FAO/OIE/UNEP recognised experts) in the EPT countries as the biodiversity/environment professional contribution to the One Health approach. This would be in support of joint initiatives on emerging disease and major disease outbreaks and the developing IRCM.
- Support development of linkages between IRCM and the International Health Regulations, as well as linkages between AU-IBAR and the One Health Central and East Africa (OHCEA) Network.

The first of the four proposed workshops has been organized by AU-IBAR and the FAO-EMPRES Wildlife Unit for the week of November 22, 2010, in South Africa. Due to scheduling limitations for FAO-EMPRES personnel, it is critical that Dr. Richard Kock (Zoological Society of London) deliver the training. RESPOND requests fast-track approval for support of Dr. Kock's travel and time to deliver this training.

VI. FY3 NEW CONCEPT PAPER FOR ADDITIONAL FUNDING:

Introduction:

The shortage of wildlife health specialists in Africa was identified by AU-IBAR and OHCEA as one of a significant constraint to operationalizing the One Health approach in Africa. Enabling trainees to use their skills to support wildlife health monitoring and disease surveillance within national frameworks is a critical part of supporting career path development and transforming practices. AU-IBAR works to strengthen the skills of wildlife health professionals in Africa, and is supporting the implementation of an Integrated Regional Coordination Mechanism (IRCM) within the regional economic communities to institutionalize disease prevention and control efforts. AU-IBAR is considering institutionalization of WILD as part of professional health training across the African continent.

In Y2, and in coordination with AU-IBAR, RESPOND supported the adaptation of WILD to the African context (“WILD I”) and delivery of the first workshop in Rwanda in July 2011. This workshop, which focused on savannah ecosystems, involved 24 participants from the ministries responsible for human, livestock and wildlife health from 10 countries. The workshop focused on the concept of One Health, its various interventions and the role of each stakeholder involved in human, livestock and wildlife health. It also emphasized the role of wildlife and the

environment in a one health approach and underscored the importance of interface in diseases surveillance. Using roll-over funds from Y2 and additional funds in year 3, RESPOND will support a similar WILD 1 training in additional (which two countries?) 2 EPT countries, aimed at ministerial staff in countries with forest and savanna ecosystems.

These modules will focus specifically on national and transboundary needs of One Health teams, looking at locally important infectious diseases and ecosystems of concern, building more strongly on clinical skills of wildlife health professionals (e.g. capture and sampling of priority wildlife species) and their integration with or into the veterinary and public health sectors (WILD 2).

EPT and other Partners:

Under this sub activity, RESPOND will work closely with FAO-EMPRES wildlife unit, PREDICT, and IDENTIFY. PREDICT and IDENTIFY will provide expert for the trainings.

Goal:

Using a One Health approach, strengthen the skills of wildlife health professionals in Africa, strengthen cross border coordination and emphasize the role of interfacing between wildlife, human livestock and environment in disease monitoring and surveillance.

Objectives:

- Improve wildlife health monitoring and disease surveillance within the context of One Health
- Build the capacity of participating countries for long term wildlife health monitoring, disease surveillance, and outbreak investigation
- Improve and promote multi-sectoral and multidisciplinary collaboration in the management of zoonotic diseases and ecosystem related issues.

Activities:

- Continue to adapt the Wildlife Investigation and Livestock Disease module for regional use in two other EPT African countries.
- Continue to provide technical experts to deliver the WILD training module and mentor trainees;
- Continue country specific manual, distance learning and curriculum development for the training, in collaboration with AU IBAR, country experts, RESPOND partners and subgrantees, and other interested stakeholders;
- Hold two more WILD didactic training workshops, based in RECs, with at least three participants from each EPT target country in Africa;
- Integrate WILD trainees into wildlife health monitoring, disease surveillance, and research activities in EPT countries, to strengthen applied skills and knowledge, and with the primary objective of achieving capacity for long term wildlife health monitoring, disease surveillance, and outbreak investigation
- Support the Preparation of WILD module publication by FAO in collaboration with AU-IBAR that can be adopted by other countries.

Expected Outcome:

- Two didactic and experiential WILD training workshops conducted in two other EPT countries.
- WILD trainees integrated into wildlife health monitoring and disease surveillance activities in EPT countries where training has been conducted.
- Revised WILD module publication available in both electronic and hard copy formats.

RESPOND Concept Paper

FY3 New Sub-activity Funding

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 1.5.4 EC

Sub-activity name: Residency based knowledge partnership model for building veterinary public health competence in Uganda

Partner lead: UMN

Grantee: Makerere College of Veterinary Medicine

Introduction:

Through a combination of direct assistance and a grant to Makerere University, RESPOND will help develop a residency-based program in Veterinary Public Health (VPH) at Makerere University's College of Veterinary Medicine (CVM). Using best practices and techniques from a unique VPH residency program at the University of Minnesota (UMN), the Makerere CVM is interested in adapting a similar residency program as a means of strengthening its programs to become a leading institution in meeting regional workforce needs for applied problem solving in public health, zoonotic disease, food security and development.

Modeled on a clinical residency, a resident spends 75% of their time working on practical problems in public health through paid partnerships with industry, government and academia, with the remaining 25% of their time spent in traditional learning environments earning a degree. At UMN, the residency is tied to an MPH program and is certified by the American College of Veterinary Preventative Medicine, and all graduating residents have become board certified by this body (following a rigorous examination). In addition to building on the model of the UMN residency, this program will review and integrate where appropriate key components of the Tufts Masters of Conservation Medicine and the pilot modified Masters of Preventative Medicine at Makerere University.

On 4th August 2011, 15 potential Ugandan partners and stakeholders (including government, academia and private sectors) met to discuss how the existing residency could be adapted to Uganda. All expressed enthusiasm for the idea and recommended that, long-term, it extend beyond veterinary public health to include human, environmental and wildlife health professionals, thus aiming for a broader “one health” residency-type program. In this first year, the program will develop as a VPH residency program, recognizing and leveraging towards expansion to other one health disciplines. Thus the program will initially be targeted to address a critical need to provide applied practical training to Ugandan veterinarians in areas of food safety, food security, zoonotic disease, animal disease surveillance systems, outbreak investigation, and outbreak response. All of these areas address strengthening the “veterinary pillar” of the one health framework which remains weak, underdeveloped and under resourced throughout most of East and Central Africa.

Selected trainees will be trained in a variety of applied learning opportunities directed towards developing skill sets and critical competencies including: food safety and security, emergency response, environmental health, infectious diseases, epidemiology (including wildlife epidemiology), participatory disease surveillance and response, field pathology and diagnostics, one health approaches, health policy and administration. A Ugandan coordinator of the new

program will be sent to UMN for 2 months to learn the administrative structure and become familiar with the residency model, with the aim to adapt the program for Uganda and East Africa context. Additional stakeholders will be sensitized to garner both potential local partners as well as, interest additional Makerere University faculty members to the strengths and benefits of the program. A faculty member from Makerere CVM will be designated as program mentor, and participate in the UMN residency as a mentor in training. Throughout RESPOND Y3 bi-directional faculty, student and staff exchange will be used to enhance the capacity at Makerere to adapt and implement the residency program, as well as to work together to adapt the Minnesota residency to meet workforce and funding needs in Uganda. Once the program is successfully running, the program coordinator and advisors at Makerere will assist another school within the region (targeting an additional one health profession [preference for Nursing] to help with OHCEA expansion) to develop a similar program.

EPT and other Partners:

College of Veterinary Medicine, Makerere University (OHCEA member)

Goal:

Developed residency-based program in Uganda which can serve as an anchor for the region and continent.

Objectives:

1. To provide applied practical training to Ugandan veterinarians in the area of epidemiology, food safety and security, outbreak response, and field diagnostics - thereby improving food safety supply chains, outbreak control and response.
2. To develop a long-term sustainable plan for the Uganda residency program that reviews and incorporates best practices of existing programs at US and African partner universities and works with stakeholders to expand the program to other disciplines or regions as meets needs identified.
3. To foster exchange of faculty, students and staff between OHCEA institutions and also between OHCEA institutions and RESPOND's university partners.
4. To strengthen networks between university, community, private, and public partners in order to provide sustainable development around the region.

Activities:

1. From September 2011-August 2012, one faculty member from Makerere CVM will participate in the UMN residency program as a mentor in training. This faculty member will enroll in the UMN Executive MPH program with the other residents, but will have a dual role in the residency of participating in residency projects while also co-mentoring projects with UMN faculty to build skills in applied training mentorship.
2. At the same time, a student from Makerere University will participate as a full resident and MPH student at UMN.
3. In September 2012, both mentor and trainee will return to Makerere University to initiate the residency program there, one as a mentor and one as a student in the program.

4. Both individuals will be closely mentored by UMN faculty through faculty exchange and through UMN staff based in the RESPOND field office.
5. The two students will attend distance learning and the UMN based Public health Institute (PHI).

Expected Outcome:

1. An established residency program in veterinary public health, which can be readily expanded to other OHCEA institutions and other one health disciplines as needed.
2. At least 5 residents trained in the program that can provide a valuable human resource across and between academic, public and private sectors in Uganda and the region.

RESPOND Concept Paper

FY3 Additional Funding for an Existing Sub-activity

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 2.2.1 GL

Sub-activity name: Develop best management practice recommendations for extractive industries based on PREDICT-identified vectors in hot spot regions

Partner lead: DAI

Grantee: N/A

VII. FY2 APPROVED CONCEPT PAPER:

Background

Development of a pandemic of a zoonotic pathogen would require transmission between a wild reservoir and humans or their domestic animals; direct transmission between humans; and movement of the infection from a local to the global population. Emergence of new zoonotic infectious diseases is directly related to increased interaction between human and animal populations resulting from changing patterns of wildlife populations and human intrusion on new ecosystems. Because the frequency of human interaction with animal hosts is a critical factor; those human populations with the most frequent direct and indirect exposure to animal hosts are the most susceptible. People living in and near wild areas, bush meat hunters/traders/consumers, loggers and miners are recognized as populations at risk.

Industrial activities— forestry, onshore oil and gas, and mining operations—increase human incursions into wildlife areas and can create mechanisms to facilitate zoonotic pathogen transmission. Forestry/timber harvesting, in particular, has the greatest possibility to increase the potential and frequency of human-wildlife interaction and thereby exposure. Forestry brings people into sparsely populated areas increasing the likelihood for human-wildlife interactions; and increasing the size of the human population that could be exposed to zoonotic pathogens. Oil and gas and mining also increase these interactions through land clearing and road construction and human. Logging, land clearing, and road construction increases human access to previously inaccessible or hard to reach areas of the forest, and enables more people to enter the forest to settle, hunt, collect forest products or create plantations.

Logging, land clearing, and road construction change forest ecosystem dynamics by removing trees, altering the canopy density, decreasing the amount of shade and introducing open space and edge. This changes the forest structure and modifies the character of the available wildlife habitat. The presence of humans and machinery also can disturb patterns of wildlife feeding, reproduction, and movement and migration. These ecosystem modifications and the presence of people changes the wildlife dynamics in a forested ecosystem in ways that may result in increased risk of zoonotic disease transmission.

RESPOND ACTIVITIES

Under Global 2.2.1, the short-term goal is for Louise Flynn will be to participate in a working group with PREVENT and PREDICT to develop a framework and tool to identify high risk activities associated with extractive industries' practices that could lead to zoonotic disease

transmission and to identify ways to minimize the transfer of zoonotic diseases by interventions at the policy, organizational and/or individual level that limit human exposure.

Specific activities will include:

1. Participate in an extractive industries working group will include individuals from USAID and from three EPT projects (PREVENT, PREDICT, RESPOND).
2. Collaborate with AED to develop a plan for the activities that will occur from December 2010 to May 2011.
3. Collaborate with AED to develop a job description for an Extractive Industry Lead for PREVENT.
4. Develop and provide preliminary forestry, oil and gas, and mining activities and their environmental and social impacts and begin to identify activities that have high risk for zoonotic transmission
5. Participate in conference calls every two weeks to identify the links and pathways between extractive industry practices, their consequences (positive or negative) for emergence of zoonotic diseases then, working from this framework, develop an initial list of opportunities for risk mitigation (best management practices).
6. Participate in the working group to use the results of the review to develop a risk mitigation tool to inform and guide discussions with policymakers and key stakeholders, ecosystem dynamics, the risks of disease transmission associated with industry activities, opportunities for mitigation and potential barriers to implementing such mitigation activities.
7. Collaborate with PREVENT in initiating discussions with industry representatives.
8. Hold discussions with industry trade councils and individual industries about adopting the recommendations.

VIII. FY3 NEW CONCEPT PAPER FOR ADDITIONAL FUNDING:

Introduction:

RESPOND has been participating in the Extractive Industries Working Group for approximately six months. During that time, RESPOND has identified industry practices in the development and operations of facilities; identified the environmental impacts of those practices; and made preliminary suggestions of the potential for zoonotic disease transmission associated with industry practices. PREDICT used some of this information to develop multiple version of a risk assessment tool that could be used by industry to identify practices that could increase or decrease potential zoonotic disease transmission.

RESPOND has been working with the Extractive Industries Work Group to develop a white paper that:

- Documents the effects of oil and gas development activities on changes to ecosystem dynamics/wildlife behavior/activities,
- Identifies high risk areas/activities for human/wildlife interactions for potential transmission/amplification of zoonotic diseases, and
- Develops preliminary recommendations for mitigation strategies to reduce risks of transmission and amplification of zoonotic diseases.

The white paper that is designed specifically to provide the evidence base to document the effects of extractive industry activities on rodents, bats, and primates that occur in French Equatorial Africa, French Equatorial Africa was selected as the first location to do this type of analysis because Gabon will be used as the test country as a result of USAID EPT program existing activities there..

RESPOND is currently focusing on the wildlife and ecosystem effects of extractive industry development and operations, while PREVENT will focus on the socioeconomic and policy aspects of extractive industries and risks related to transmission of zoonotic diseases.

Year Three will focus on building a solid evidence base of the effects and linkage between extractive industry development and the potential risks of transmission of zoonotic diseases, identifying the existing mitigation measure/best practices that could be applied to reducing or eliminating the transmission routes, and initiating discussions with industry and other organizations about the application of these measures/practices.

EPT and other Partners:

Africa only: (Any sub-activity in Africa, especially involving training, explain how this activity is being coordinated with OHCEA. USAID does not want us to do parallel activities and they want to make sure that we are supporting our cornerstone strategy. If the sub-activity does not link with OHCEA, please justify why not, and include options for developing future linkages)

This activity will be done in conjunction with the Extractive Industry Working Group which is composed of members of PREVENT, PREDICT, and RESPOND.

This activity would involve possibly working with the World Wildlife Fund in Gabon and Uganda. Both branches of these organizations are actively engaging with extractive industries or the associated regulatory organization in their respective countries.

Although the proof-of-principle for this project will occur in Africa, its reach is global and is not being coordinated with OHCEA and there are no plans at this time for it to be linked to OHCEA.

Goal:

To initiate dialogue with oil and gas, mining, and timber organizations in Africa and Asia as well as with Industry Councils and Lending Institutions regarding emerging pandemic threats and measures that industry can take to minimize the risk

Objectives:

To develop an evidence base to support any recommendations for best practices and mitigation measures to prevent or limit the transmission of zoonotic diseases in extractive industries.

To formulate a cogent set of best practices/mitigation measures that would be applicable to oil and gas, mining, and timber with respect to zoonoses transmission.

To engage in discussions with industry, industry councils, and lending organizations about these practices/measure about their practicality and implementation

Activities:

Phase I

In the beginning of Year 3, RESPOND will complete the white paper that is currently under development and then will ground truth it. RESPOND will travel with PREVENT to Gabon in the Fall of 2011 to solicit input from key stakeholders about concerns with respect to extractive industry development, zoonotic disease transmission, and mitigation strategies at a meeting proposed by World Wildlife Fund Gabon.

World Wildlife Fund plans to convene a 1-2 day meeting in Libreville or Brazzaville on Mining and Conservation in Tridom, the trinational conservation area that covers northeastern Gabon, southern Cameroon, and northwestern Congo (Dja, Odzala, and Minkebe National Parks and the surrounding areas in the three countries). Participants in the meeting would include mining and forestry companies that are or will be operating in the area, NGOs, and government representatives. The theme will be how to organise the most effective 'cohabitation' of mining and conservation in the TRIDOM Interzone. The aim would be to develop a strategy that recognizes the need for economic development, including the extraction of minerals, which maximizes benefits on the development of local communities, and minimizes negative social and environmental impacts. WWF's goals are to:

- Raise awareness with mining companies in TRIDOM about the environment in which they operate, what their cumulative impacts can be, and why conserving the landscape is so important
- Raise awareness with non-mining stakeholders (governments, forestry companies and conservation NGOs) about the imminent mining threat/opportunity for TRIDOM and the need to address this collectively
- Get a commitment from the Iron mining companies exploring for IRON in TRIDOM to coordinate conservation efforts amongst themselves (with a special focus on a bush meat strategy)
- Develop a concrete action plan on how the various stakeholders active in TRIDOM will work together to minimise the negative environmental impacts of mining and contribute to conservation in TRIDOM over the next 2 years

RESPOND would provide direct assistance to WWF to support planning and logistics of this meeting. RESPOND will assist in the planning of the agenda for the meeting. RESPOND also would have two people attend to make a presentation about RESPOND and to make a presentation about the findings/recommendation of the white paper. In addition, RESPOND would host a discussion about the preliminary mitigation measures.

Using the outcome of the discussions, RESPOND would update the white paper. These recommendations would be fed into the XRAT tool. After the initial meeting in Gabon,

RESPOND will support other efforts identified by Dennis Carroll to work with the Chinese in Gabon. In addition, RESPOND will draw upon contacts made at the meeting to further the discussion with industry, NGOs, and government ministries.

Using the information gleaned from these meetings and discussions, RESPOND, through the Extractive Industry Working Group, will support USAID in discussions with the International Finance Corporation and World Bank concerning the development of a emerging pandemic threat guideline for industry that incorporates that XRAT tool. RESPOND, through the Extractive Industry Working Group, will also visit the International Petroleum Industry Environmental Conservation Association (IPIECA), the International Council of Mining and Metals (ICMM) and the Congo Basin Forest Partnership to discuss the same topic.

Depending on the progress made, RESPOND, through the Extractive Industry Working Group, would present preliminary findings at the first annual Forestry Research Network of Sub-Saharan Africa (FORNESSA)/International Union of Forest Research Organizations (IUFRO) conference in Nairobi, Kenya in June 2012 and the Society of Petroleum Engineers Health, Safety, and Environment Conference in Perth, Australia in September 2012.

Phase 2

After the initial work in Gabon is complete, RESPOND will work with the Extractive Industries Working Group to develop a white paper similar to the one developed for Gabon that will be tailored to oil and gas development in Uganda. As part of the paper development, the major stakeholders would be interviewed to solicit their input with regard to best practices and mitigation measures. This would include the oil companies, Uganda Wildlife Authority (UWA), NEMA, and Ministry of Health (MOH). RESPOND would update the recommendations as a result of these meetings. Once the white paper is updated and the recommendation refined, RESPOND would either

1. Convene a ½ day meeting in Uganda with the UWA, NEMA, MOH, NGOs, and industry to evaluate the assessment and recommendations in order to refine each and discuss how the recommendations could best be made operational; or
2. Support and participate in a meeting of stakeholders working on wildlife/environmental issues in the Albertine Rift area to discuss our recommendations.

The following paragraphs describe the status of oil and gas development in Uganda and the importance of expanding the project to this area.

Oil and Gas Development in Uganda

The Albertine Rift area of Uganda and DRC is one of the richest areas of Africa for biodiversity; hence, the respective countries have established national parks and game reserves in the region. Multiple oil explorations have been installing exploration wells throughout the region and have confirmed discoveries of more than 3 billion barrels of oil. Negotiations are on-going, but the Ugandan government is committed to develop their oil resources.

Oil exploration, development, and production are and will be occurring in an area that has a history of ethnic conflicts, wars, and insurgencies. There are multiple existing stressors on the natural environment. Livelihoods of the local population are based on the local natural

resources - fishing, cattle grazing, agriculture, and logging. Natural resource production methods are rudimentary. Illegal logging is occurring. Hunting and poaching occur in and outside of protected areas in the region.² Mining occurs in the DRC in protected areas and hunting has occurred extensively around these mining areas.³

Oil and gas development has the potential to alter the existing human-livestock-wildlife-ecosystem dynamics in the area. A primary impact will be the loss of habitat from the conversion of undeveloped lands to infrastructure for the oil facilities and for the accompanying urban development. Roads could be cut through previously inaccessible areas and facilities could be built in areas that previously represented wildlife habitat and/or migration corridors. The introduction of roads and pipeline or transmission corridors opens up areas that sometimes have been previously inaccessible to hunting. Depending on the location, oil field facilities in or near nature reserves, national forests, and national parks could disrupt or alter wildlife habitats (nesting areas, food and water access, etc.) and migratory patterns. Noise and human/vehicle movement during construction and operations could also disturb wildlife in the surrounding areas leading to changes in reproduction, feeding, and hunting success. In addition, wildlife in national parks and reserves are acclimated to the presence of people and may be more susceptible to hunting.

There are other documented impacts to community health associated with oil and gas development that may increase the potential transmissibility of a zoonotic disease as well as the potential for outbreaks. Oil exploration and production often lead to population in-migrations, specifically laborers, their families, and others who recognize the potential of establishing new businesses to serve the oil industry and provide services to the new migrants. Typically when there is new oil development, there is a large influx of male workers into an area. Families follow these workers, as do sex workers. Hence, there can be a local increase in unwanted pregnancies, sexually transmitted infections, and HIV/AIDS. The introduction of a new worker population earning good wages can put stresses on the local social dynamics and infrastructure. For example, the recently-wealthy husbands may choose to take a second wife, resulting in the first wife effectively raising the children alone. These stresses can include:

- Increased demand for food, housing, and other services that leads to higher prices;
- Increased demand on local infrastructure such as the health care system, water and sanitation, etc;
- Increases in narcotic and alcohol abuse;
- Increases in single-parent children;

² Westerkamp, M. and A. Houdret. 2010. Peacebuilding Across Lake Albert: Reinforcing environmental cooperation between Uganda and Democratic Republic of Congo. Initiative for Peacebuilding cooperation on natural resources, environment, and economy cluster.

³ Plumptre, A.J., Behangana, M., Ndomba, E., Davenport, T., Kahindo, C., Kityo, R. Ssegawa, P., Eilu, G., Nkuutu, D. and Owunji, I. (2003) The Biodiversity of the Albertine Rift. *Albertine Rift Technical Reports* No. 3, 107 pp.

- Increased domestic abuse; and
- Increase in crime rates

These stressors can lead to significant changes in the socioeconomic dynamics of communities and increase the vulnerability of certain populations, particularly the poor and uneducated. Although these stressors are not directly associated with the potential zoonotic disease transmission, these potential shifts in community dynamics can lead to an increased vulnerability to disease transmission and outbreaks due to population shifts, movement, and sudden increases.

Uganda’s National Environmental Management Authority (NEMA) and the Ugandan Wildlife Authority manage the protected areas in this region. Several non-governmental organizations have been established with the aim to protect the environment in the Albertine Rift area. Among these is the Central Albertine Rift Protected Area Network. This network was formalized at the national level in 2009 between the DRC, Rwanda, and Uganda. This development of this network was facilitated by the International Gorilla Conservation Project. World Wildlife Fund (WWF) with funding from UNDP has been implementing the Conservation of Biodiversity in the Albertine Rift Forests of Uganda project. In addition, the Nile Basin Discourse and the Albertine Rift Conservation Society are working on natural resource conservation issues in the area.⁴ The Uganda Wildlife Society completed an analysis of the situation and published a document that provides recommendations to preserve the conservation and tourism values of protected areas in the Albertine Rift area in the face of petroleum development, such as establishing wildlife corridors and preservation zones, wildlife restocking, land swaps, and community education.⁵

Dramatic changes will occur in this region over the next five years. Not only will there be oil production, but an oil refinery and at least one pipeline will be built. The area is at a high risk for disease outbreaks given its history of such occurrences and its proximity to the recent yellow fever outbreak, since the host, agent and environment will be in flux. Oil production has not begun in the area, and EPT has the opportunity to make recommendations to the petroleum industry on risk and liability reduction. This would include practices that they can incorporate into their operating procedures that would reduce the risks of potential transmission of zoonotic diseases, improve their readiness to support Ministry of Health outbreak response, and supplement their worker and community public health efforts.

Expected Outcome:

The expected outcomes for Year 3 include the following:

⁴ Westerkamp, M. and A. Houdret. 2010. Peacebuilding Across Lake Albert: Reinforcing environmental cooperation between Uganda and Democratic Republic of Congo. Initiative for Peacebuilding cooperation on natural resources, environment, and economy cluster.

⁵ Amaniga Ruhanga, I. et al. 2009. Maintaining the Conservation and Tourism Value of Protected Areas in Petroleum Development Zones of the Albertine Rift: Ensuring Win-Win Policy Approaches. Uganda Wildlife Society. Oil and Gas Series #2.

1. Continue to support the efforts of the extractive industries working group.
2. Completion of white paper on the effects of and linkages between extractive industry practices in Equatorial French Africa on Rodents, Bats, and Primates with respect to emerging zoonotic diseases
3. Development of a preliminary list of existing best practices/mitigation measures to limit or eliminate transmission of emerging zoonotic diseases based on literature search
4. Provision of funding for and attend a WWF conference in Gabon or RoC to discuss conservation and mining in the TRIDOM area in order to discuss with industry the issues associated with EPT and discover if they are taking any preventative measures 3. Develop a white paper for Uganda's Albertine Rift Area.
5. Engagement with industry in Gabon about emerging pandemic threats, industry practices that could increase potential transmission risks, and measures to decrease the risks
6. Compilation of existing best practices/mitigation measures to limit or eliminate transmission of emerging zoonotic diseases based on literature search and in-country discussions in Equatorial French Africa
7. Provision of funding for a biodiversity/conservation meeting to be held in Uganda. 4.
8. White paper on the effects of and linkages between extractive industry practices in Uganda on Rodents, Bats, and Primates with respect to emerging zoonotic diseases
9. Engagement with industry in Uganda about emerging pandemic threats, industry practices that could increase potential transmission risks, and measures to decrease the risks
10. Compilation of existing best practices/mitigation measures to limit or eliminate transmission of emerging zoonotic diseases based on literature search and in-country discussions in Uganda
11. Discussions with IFC, ICMM, Congo Basin Forest Partnership, and SPE about existing risk reduction measures and the potential for development of guidelines for industry with respect to emerging pandemic threats.
12. Attendance conferences/present at conferences to discuss EPT and extractive industries role in prevention of transmission

RESPOND Concept Paper

FY3 Additional Funding for an Existing Sub-activity

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 3.2.0 GL

Sub-activity name: Outbreak response support for newly emerging epidemics

Partner lead: DAI

Grantee: TBD

IX. FY2 APPROVED CONCEPT PAPER:

[Fast tracked in Y2 work plan]

At the request of host-country governments and international health agencies with legal authority for outbreak response, RESPOND will provide technical, logistical, and material support to facilitate and improve outbreak response. This can include support for subject-matter experts to consult or participate, provision of logistics (supplies, PPE, vehicles or fuel to transport outbreak response teams), rapid refresher training (use of PPEs, safe collection, shipment and processing of samples from humans and animals with suspected illness). This support will be provided on a case-by-case basis, and available to countries within the EPT hot-spot regions.

- Partners: In collaboration with host-country governments, work with international health agencies (in-country and regional offices), DELIVER, EPT partners, donor-sponsored programs, AFENET, SAFETYNET, TEPHINET, others TBD.
- Expected results: Training, technical, logistical, material and communications support provided to address identified gaps; improved efficiency and efficacy of outbreak response

X. FY3 NEW CONCEPT PAPER FOR ADDITIONAL FUNDING:

Introduction:

To date during Year 2, RESPOND support and expenditures of funding to support national government officials in the response to actual outbreaks was focused in Uganda, during three events:

- an outbreak of anthrax in wildlife in Queen Elizabeth 2 national park,
- an outbreak of unknown viral hemorrhagic fever (later diagnosed as yellow fever) in 15 districts in northern Uganda (56 deaths, 254 suspected case reported), and
- a fatal case of Ebola virus infection in central Uganda

EPT and other Partners:

RESPOND support included working with EPT partners (e.g. PREDICT, IDENTIFY, DELIVER and CDC Uganda) in a coordinated One Health approach to maximize efficiencies and minimize duplication. DELIVER assisted with shipping personal protective equipment (PPE) needs to prevent infection in health care workers caring for suspected cases, and for field investigators, based on estimates by technical experts and CDC Uganda and RESPOND as well as Ministry of Health). Additional support with partners included providing in-time training to UVRI laboratorians at CDC-Fort Collins to build in-country capacity in Uganda to promptly diagnose

the cause of viral hemorrhagic fever. Additional funds supported placement of subject matter experts to coordinate epidemic response and training with Ugandan Ministries (epidemiologist and laboratorian), and supporting AFENET subject matter experts to assist the Ugandan government during outbreak investigations (with qualified personnel, logistical support, and laboratory supplies).

Makerere University is a core member of the OHCEA network, and RESPOND support was linked also to this university, including designing a training activity in the usefulness of pathology as a key diagnostic strategy during outbreaks, and working with DELIVER to purchase appropriate technology (a histopathology scanner) linked to building diagnostic capacity at both the university and MAAIF during outbreaks. In addition, RESPOND funded support for a Makerere Masters degree program at FVM to train Ugandan veterinarians in public health, and strengthen skills related to disease surveillance, outbreak investigations and field epidemiology.

In Year 3, RESPOND technical staff expects that similar requests for outbreak response support are likely to originate from other EPT countries in both East Africa (in addition to Uganda), as well as those from other regions; including, for example, DRC in the West Congo Basin, as well as countries in SouthEast Asia.

Goal:

Improve the capacity of governments, including at the provincial and district levels, to more promptly diagnose the cause and respond to suspected and actual outbreaks of emerging infectious diseases, including zoonoses.

Objectives:

- Improve One Health coordination at national level, including for national task forces, during actual outbreaks of emerging infectious diseases;
- Improve capacity at the sub-national level (e.g. provincial, district) through implementation of training on outbreak response, disease reporting, proper PPE use;
- Work with EPT partners, including DELIVER and CDC (including CDC Uganda and other similar offices), as well as international health organizations to strengthen training and proper use of PPE by clinical staff and field investigators;
- Provide support to technical groups (AFENET, SAFETYNET) to enhance availability of subject matter experts to assist with outbreak investigations and planning;
- Work in collaboration with OCHEA member institutions (e.g. Makerere and others) in EPT countries to support technical input to government, strengthen capacity in outbreak training, knowledge and skills;
- Identify appropriate technologies (including new technologies) that will assist with more rapid diagnoses to confirm the cause of outbreaks.

Activities:

- Activities for any specific outbreak of an emerging infectious disease will occur after the responsible national government requests RESPOND assistance, and details of support for response will be based on collaborative discussions with the international health agencies (WHO, FAO/OIE, CDC) and EPT partners, with a final approval step by USAID before activities are implemented by RESPOND.

Expected Outcome(s):

- Improved capacity to diagnose and respond to outbreaks of EIDs in EPT countries that request assistance;
- Improved coordination during outbreaks with international health agencies, EPT partners, OHCEA and NGOs during infectious disease outbreaks;
- Design and implementation of appropriate training workshops to enhance the skills of district and provincial level officials in One Health-consistent approach to outbreak response, with input of lessons learned from responses to actual outbreak ;
- Support for planning and provision of PPE, and appropriate PPE training in coordination with WHO, and DELIVER to lower risk of transmission of infections due to occupational risk during outbreaks;
- Provision of training and proper containers to enhance the capacity to safely collect and ship specimens from suspected cases (e.g. of viral hemorrhagic fever) to the laboratory to more promptly diagnose of the cause of outbreak and epidemics;
- Use of appropriate (including new) technologies to more promptly diagnose the cause of outbreaks.

RESPOND Concept Paper
FY3 New Sub-activity Funding

Cooperative Agreement Number GHN-A-00-09-00015

Sub-activity number: 3.4.7 SE

Sub-activity name: Support training to strengthen One Health epidemiological teams at selected provincial and district levels in Cambodia.

Partner lead: DAI

Grantee: TBD

Introduction:

USAID announced in the first month of FYEAR 2011's third quarter that Cambodia would be participating in the Emerging Pandemic Threats program along with other countries in SE Asia. Subsequent to this announcement, RESPOND communicated with officials in the Ministry of Health of the government of Cambodia about the RESPOND concept of supporting collaborative in-service training activities designed to strengthen outbreak response capacity at the district and provincial levels.

At a multi-sectoral workshop in Siam Reap in May (May 18-20th), facilitated by RESPOND, the Royal Government of Cambodia stressed the need for strengthening and capacity building of their district and provincial level staff in the areas of field epidemiology, disease investigation and outbreak response. A One Health approach to such training was strongly endorsed at the workshop and thus a similar activity to those already approved for other SE Asian countries is a high priority for RESPOND.

This proposal is based on the models developed for Vietnam and Thailand for ongoing in-service training and follows initial discussions held in Cambodia during the discovery phase of the RESPOND project (May 2011) with in-country representatives from EPT partners, including WHO-Cambodia, CDC and FAO (Bangkok regional office), leadership of the Applied Epidemiology Training Program in the Ministry of Health, and officials from the Ministry of Agriculture National Veterinary Research Institute (NAVRI).

The proposal is in three parts:

- Support for the Cambodian Modified Field Epidemiology Training Program (called Applied Epidemiological Training - AET)
- Joint training of MoH/ MAFF staff at national, provincial and district levels to help with identification and response to the priority zoonotic diseases
- Support for field investigation of outbreaks of zoonotic and other emerging or reemerging infectious diseases (EID) by Rapid Response Teams throughout the country to complement the training activities

The guiding principles used for implementing these activities are:

- Cambodian National Outbreak Investigation Guidelines
- Cambodian National AET training curriculum
- Cambodian National Zoonotic Disease Policy

This proposal builds on existing work carried out by MoH, MAFF, FAO, WHO, US CDC and USAID sponsored sub recipients in the community to prevent and control avian influenza and H5N1. The focus is to build on the success of the existing avian influenza collaboration. RESPOND funding will have a direct impact on improving coordination and quality of outbreak investigation of zoonotic diseases in Cambodia.

Goal:

To strengthen the quality and usefulness of the existing inservice training methods and materials in order to improve the outbreak response capacity of government staff working at the provincial and district levels in Cambodia, and to broaden activities to include additional animal and wildlife health professionals, as well as other human health staff involved in surveillance (e.g. nurses).

Objectives:

To improve knowledge and practical skills of government employees responsible for the areas of disease surveillance, outbreak identification, disease reporting, disease control, communication, teamwork and the effectiveness of responses in provinces and districts.

EPT and other partners:

This work will be implemented by WHO, in collaboration with the following partners, to ensure that the proposed activities do not duplicate or interfere with other existing training activities, and that they reflect current Ministry priorities.

- Cambodia MoH, MAFF, NIPH
- RESPOND
- FAO
- US CDC
- Other EPT Partners

Overview of planned activities:

The objective is to integrate three tiers of activities currently supported by WHO to improve One health outbreak response. The proposal combines in depth training of government staff on outbreak response and surveillance as part of a modified Field Epidemiology Training program, with focused short term training courses on specified priority zoonotic diseases for human and animal sector staff at the national and sub national levels, and provision of funds so that they can use their newly acquired skills to investigate outbreak situations.

1. Support for the Cambodian AET Programme

The AET program started in 2011 with training of the first cohort, and is a 6-8 month in-service training activity, mixing 2 months of didactic training with on-site supervision and field outbreak and surveillance activities. It is based on a modified FET program and aims to be the next step in developing field epidemiology services in Cambodia.

The program already has an international technical advisor, hired by WHO, and the curriculum has been developed. There are both national and international supervisors/mentors who support the students during the field work. The program has a national coordinator although the funding for this person in 2012 is not secure as yet.

The time line of proposed activities is depicted in the following table:

Month	Activity	Number of students	Notes
1	<ul style="list-style-type: none"> • Didactic training 1 • English training 	15 MoH based students selected on merit; 10 MAFF participants	<p>First didactic training focuses on basic epidemiology and is open to 15 students, of these only 5 will be selected to go for the full field training</p> <p>2 weeks</p>
2 - 3	<ul style="list-style-type: none"> • Produce weekly and monthly surveillance reports • Perform an outbreak investigation if possible • Internet based English training 	5 AET students	Field supervision by national supervisors and international mentors
4	<ul style="list-style-type: none"> • Didactic training 2 • English training • AET students to develop proposal for surveillance project 	5 AET students; 10 MoH and 10 MAFF students	2 weeks
5 - 6	<ul style="list-style-type: none"> • Data gathering for surveillance project • At least 1 outbreak investigation each student • Monthly and weekly surveillance reports • Internet based English training 	5 AET students	Field supervision by national supervisors and international mentors
7	<ul style="list-style-type: none"> • Didactic training 3 • Finalize reports • Finalize surveillance project 	5 AET students; 10 MoPH students and 10 MAFF students	2 weeks
8	<ul style="list-style-type: none"> • Final Workshop and Graduation 	All students	1 week

The AET program runs once a year, with the next cohort due to start in January 2012. The five students who will be chosen to undertake the complete training course are currently members of MoH Rapid Response Teams (RRTs), responsible for early warning, surveillance and

outbreak investigation of zoonotic, food borne, or other emerging diseases at the sub-national level.

The didactic course will involve participants from other sectors, which will include sub-national level staff from MAFF. To maximize the effectiveness of the course, it is envisaged that there should be geographical matching between candidates selected from health and agriculture so that joint training will have maximum benefit.

The didactic training will be focused on basic field epidemiology, improving surveillance quality to improve Cambodia's Early Warning Surveillance System, outbreak investigation, performance of case control studies in an outbreak setting and basic analysis of data. These are all part of the national strategy for outbreak response.

The best graduate of the course along with international and national technical advisors (total 3 people) will attend the international TEPHINET course in 2012.

2. District and Provincial level training on priority zoonotic diseases

A Joint MoH/MAFF/WHO/FAO/WCS Technical Working Group on Zoonotic Disease Control (TWG) has identified four priority diseases as the focus of initial training activities. These are:

1. Avian Influenza
2. Rabies
3. Leptospirosis
4. Anthrax
5. Other diseases as needed

Currently WHO is supporting MoH, MAFF and other partners to finalize the national policy for the management of zoonotic diseases, with a focus on the wishes of the TWG for priority zoonotic diseases. In addition, WHO is also developing training material for the management of the four priority diseases, focusing on the practical needs of the country. The next step after development and ratification of the policy and the training material is joint training of staff at both MoH and MAFF on management of these four priority diseases. It is envisaged that the training will be at provincial and district level, bringing together both animal and health staff.

- *Objective of the training:* to reinforce the importance of providing accurate and timely disease information to managers responsible for disease prevention and control activities, thereby protecting the public's health, and in preventing further disease transmission to themselves, their families and their communities.

The training will build upon the successful training provided to human and animal sector staff on the investigation of H5N1 influenza outbreaks by (i) expanding the program to include a wider range of infectious diseases in both animal and human populations and (ii) by improving the effectiveness of existing provincial and district level training by promoting and strengthening a One Health teamwork approach for outbreak response activities.

- *Core principle of this proposal:* to include and encourage collaborative disease surveillance and outbreak response training of veterinarians and animal health workers (both domestic and

wildlife), agriculture extension workers, physicians and other human health care workers, as well as other stakeholders, to the maximum extent possible.

- *Activities:* The process will include creating a cohort of trainers who will then train district and provincial level staff at a number of training sessions at the sub national level. Total number of participants would be around 300. This policy will act as the cornerstone of the future activities for the TWG for zoonotic diseases.

An initial ToT workshop of one week duration will be held with selected animal and human health staff at national level and will include staff from MoH, MAFF, National Institute of Public Health, the University of Health Sciences and one of the veterinary training institutions. Training will include specific training on the four priority diseases as well as general topics such as One Health, data collection/recording, early outbreak identification, disease reporting, appropriate sample collection and shipment (including biohazards, biosafety and PPE use), biosecurity/quarantine, and outbreak communication.

In addition, an introduction to methods for training First Responders will be delivered, following appropriate education and adult-learning principles and participatory training methods.

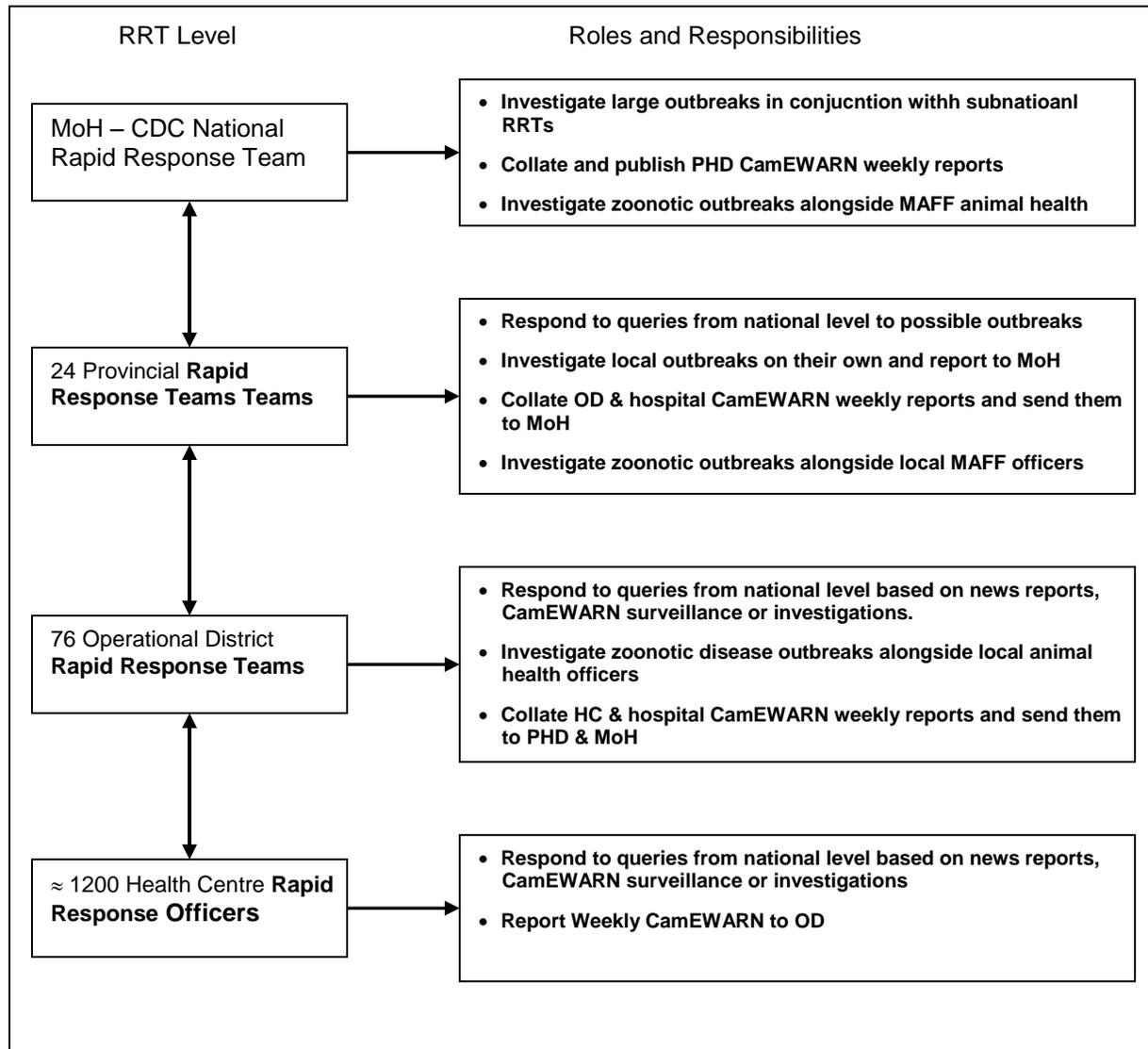
Following this initial ToT workshop, 3, three day workshops will be held to train provincial and district level MoH and MAFF staff. Each workshop will have approximately 100 students.

3. *Support for outbreak investigation to reinforce the AET and Zoonoses training activities*

The third part of the proposal is the provision of resources for staff trained during activities 1 and 2 to implement what the lessons learned. Rapid Response teams (RRTs) are the backbone of the national outbreak investigation and early warning surveillance program. Staff of MoH who will attend activity 2 will be members of countrywide rapid response teams (RRTs). While RRTs do not as yet include MAFF staff, the vision for the future is to strengthen this inter-disciplinary relationship.

RRTs will put into practice their training under activities 1 and 2 by the investigation of unusual outbreaks. The funding will provide logistics for the teams to visit the outbreak site. Membership of the team could include national as well as provincial and district level staff from the health sector, and relevant local animal health sector staff will be included as required e.g. for investigation of potential zoonotic disease outbreaks.

The figure below describes the structure:



EXPECTED OUTCOMES:

1. Increased knowledge of the principles and application of epidemiology for outbreak investigation and response for selected Cambodian provincial staff.
2. Increased scope of short-term applied epidemiology, One Health and outbreak response in-service training to provincial and district-level MoH and MAFF staff responsible for outbreaks in all provinces in Cambodia.
3. Improved capacity of staff in basic data analysis and interpretation, early outbreak identification and reporting, outbreak communication, including the need to provide timely and accurate health information to managers responsible for disease prevention and control activities.
4. Improved capacity to safely collect and transport appropriate samples as required in order to determine the cause of disease outbreaks, in collaboration with PREDICT and IDENTIFY.
5. Improved collaboration between animal and human health agencies at all levels in Cambodia in the areas of outbreak response, disease investigation and reporting, and increased awareness of international health agency priorities (e.g., WHO's IHR).
6. Improved skills and knowledge of trainers in methodologies for the training of participants and trainees attending workshops.
7. Increased capacity and resources for staff to perform outbreak response activities

ANNEX C: PROVISIONAL NEW ACTIVITIES FOR Y3

RESPOND recognizes USAID’s funding limitations, and has therefore prioritized the activities included in the main body of this work plan for Year 3. Should additional funds become available, we would propose to consider the activities included in table 7, below, for inclusion in Year 3 implementation. We would also discuss with USAID the potential for expansion and/or replication of the activities included in our work plan.

Table 7: Provisional RESPOND Year 3 Activities

Activity #	Sub-activity	Location	Description
1.2	Development and piloting of a field pathology modular course	Uganda, Tanzania, DRC	we propose to send two individuals from Uganda (potentially from Makerere SPH and SVM [OHCEA engagement], MAAIF, UWA, MoH, AFENET) to observe and participate in the Chang Mai field pathology course, then bring course instructor(s) from Chang Mai to Uganda to assist those same individuals in developing the course into a module, and pilot the modular course in Uganda.
1.5	Global MPH	ECB Regional	This initiative seeks to develop a “global” masters in public health (MPH) program. Leveraging opportunities provided by the annual Public Health Institute (PHI) at the University of Minnesota, multiple Global Health Institutes (GHI) supported by RESPOND (Kampala 2010, Chiang Mai 2011), and fostering relationships between RESPOND partner Universities and across regional offices
1.5	Uganda EPT program partner training coordination	Uganda	By leveraging local EPT partner cooperation, coordination and continuing the progress of a local Uganda EPT Partners meeting held on 5th May 2011; RESPOND will map the planned in-service training for Uganda for the year and identify opportunities for expanded impact/outreach. Local EPT partners will provide leadership for the training in their specific specialty (e.g. WHO providing subject matter experts for IDSR training), with RESPOND committed to assuring regular district-level trainings are scheduled at least quarterly, based on the priorities agreed to by Ugandan ministries.
1.5	Strengthen WL Health Capacity of Veterinary professionals in pathology, epidemiology and graduate training	ECB Regional	This sub-activity addresses three major gaps in wildlife health capacity: pathology, epidemiology and wildlife health science and management. Makerere school of veterinary medicine is recognized as the regional leader in wildlife health training. This sub-activity will include collaborative development of activities between RESPOND, PREDICT and Makerere University CVM within a grant to the latter.
1.5	Support One Health capacity via cross-over training in wildlife	Tanzania	In East Africa, the largest gap in the One Health portfolio stems from inadequate knowledge and experience in relevant wildlife matters. Thus, there is a need for wildlife experts to become more engaged in cross over training of health professionals as well as wildlife biologists and managers.

Activity #	Sub-activity	Location	Description
2.2	Facilitate the creation of a national framework to promote One Health in DRC and Cameroon.	DRC	Improving cross-border collaboration and increasing on Health capacity at a national level will support enhanced participation by DRC and Cameroon in regional efforts such as the OHCEA network. RESPOND would Support legal and policy improvement initiatives in the public health sector, taking account of human, animal, and ecosystem health.
2.4	Support regional One Health workshops	SEA regional	In Year 2, RESPOND SEA supported One Health workshops, which were deemed useful by participants. Additional funding for this sub-activity would enable continuation/repetition of similar regional workshops in Year 3.
3.2	Assessment and Strengthening of Field to Laboratory Animal Specimen Shipment System(s) in Uganda	Uganda	Particularly in emerging disease hot spots, like Uganda, infrastructure and financial capabilities is lacking for submitting diagnostic specimens, storage of specimens, conducting appropriate diagnostic testing, reporting and analysis of results. Enabling animal and wildlife professionals in the field to be able to accurately collect, ship, test and store lab samples as well as accurately reporting them will significantly contribute to conducting animal and wildlife outbreak investigations and response in Uganda.
3.2	Align USAID DELIVER histopathology scanning equipment procurement with training, technical support and sustainable infrastructure	Uganda	USAID procured histopathology scanning equipment through DELIVER to address a critical gap in disease identification highlighted by a 45 day timeline to identify and confirm an endemic pathogen (yellow fever virus) as the cause of a large fatal outbreak. This activity proposes to train 5 veterinary histopathology technicians in sample collection, tissue sectioning, and use of a histopathological scanner. These technicians will provide a base for developing a more robust and sustainable infrastructure for conducting animal and zoonotic disease investigations, by focusing on more than one diagnostic test for a listed disease.

