



PRESIDENT'S MALARIA INITIATIVE



## INDOOR RESIDUAL SPRAYING FOR MALARIA CONTROL

# Benin FY09 Work Plan

Indoor Residual Spraying (IRS) for Malaria Control  
Indefinite Quantity Contract (IQC) Task Order 1

Contract GHN-I-01-06-00002-00

Prepared for:  
United States Agency for International Development

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# I. Introduction, Background and Summary of Country MOP

In fiscal year (FY) 2008, indoor residual spraying (IRS) operations lasted for 44 days in the four targeted counties (*communes*) of Adjohoun, Akpro-Misserete, Dangbo, and Sèmè-Kpodji. A total of 142,814 households were sprayed by 265 spray personnel deployed in the targeted zones, and 521,738 people were protected in all four counties. Not all areas in the targeted zones were sprayed; 47 villages in Seme-Podji, Adjohoun, and Dangbo counties were located in flood zones. Rather than apply IRS to structures in these villages, and to protect the entire population in the four counties, one long-lasting insecticide-impregnated net (LLIN) was hung per household in these zones. In total, 15,857 nets were hung in the three counties.

The President's Malaria Initiative (PMI) and Beninese health authorities have developed a plan for IRS operations with funding beginning in FY09. As the holder of the IRS indefinite quantity contract (IQC), RTI International (RTI) was designated by USAID to support the Government of Benin (GOB) to implement this strategy through the IRS IQC Task Order 1 (TO1). This work plan describes project activities taking place between January 1, 2009 and December 31, 2009.

Based on requests by Benin's Programme National de Lutte contre le Paludisme (National Malaria Control Program [PNLP]), in FY09 PMI will support one round of IRS in Ouémé district. The Ouémé district (*Département*) has a population of approximately 521,738 people, with approximately 151,783 households eligible for spraying in 4 counties: Sèmè-Kpodji, Adjohoun, Dangbo, and Akpro-Misséréte. Additionally, the USAID/Benin FY 09 malaria operational plan (MOP) requests that nets be distributed to households in the flood zones.

In the 2008 spray round, the insecticide Bendiocarb (FICAM) was used. Currently, there are 1,600 kilograms (kg) (or 12,800 125 gram [g] insecticide sachets) of Bendiocarb in the Porto Novo warehouse. The 2009 round will require an additional 1,400 kg or 11,200 sachets to complete spraying.

The 2009 spray campaign is planned for March 2009 just before the beginning of the long rainy season, a season of major malaria transmission and the period when households in the target area are most susceptible to malaria. Before spray operations begin, RTI will conduct a range of preparatory activities, including environmental and logistical assessments and spray operator and IEC mobilizer identification and training.

## II. Overview of Strategy for IRS Country Support

Throughout the implementation of this work plan, RTI will work alongside the MOH to build its capacity to plan, conduct, monitor and assess IRS at all levels. This capacity building will include training, ground operations, information education communication (IEC), supervision, monitoring, and data collection. Specifically, RTI will work with the PNL, the Direction Départementale de la Santé (District Health Administration [DDS]) of Porto Novo, the Ministry of Environment (MOE), the head doctors of each commune, and the *chef de poste* (head of post) of each township (*arrondissement*) in the four counties.

RTI will also work the Ministry of Interior, the Ministry of Communication, the Ministry of Agriculture (MOA), the Ministry of Family and Social Affairs, the Ministry of Foreign Affairs, the Malaria Research Center of Cotonou (CREC,) and all Ministry counterparts in the four counties. RTI will also work in close collaboration with local partners in the areas where spraying will be conducted to inform beneficiaries about IRS, raise public awareness, and promote behavior change (including environmental management).

RTI will continue to provide input and report to the IRS task force which is chaired by the PNLPC coordinator in order to maintain strong communication between partners.

### **III. IRS Activities**

#### **Planning and Assessment**

##### Logistics Assessment

The experience gained from the first spray round in Benin has enabled RTI to better plan for FY09 spray round. Procurement of equipment will be conducted to replace equipment that was damaged and to procure additional personal protective equipment (PPE). RTI will also conduct local procurement of barrels, towels for spray operators, soap, trash bags, and plastic sheets to cover household furniture that can't be moved, among other supplies.

##### Environmental Assessment and Compliance

In April 2008, a Supplemental Environmental Assessment (SEA) was approved by USAID and in July an Environmental Impact Assessment (EIA) was approved by the Agence Beninoise pour L'Environnement (Beninese Environmental Agency [ABE]).

##### Pesticide Selection

As noted in the work plan, 1,600 kg of Bendiocarb insecticide is left over from the 2008 spray campaign, and in 2009 RTI anticipates procuring only sufficient quantity to augment these left over supplies to support the 2009 spray campaign. RTI further expects that the same class of insecticide will be procured, and as the current SEA applies to all insecticide in the same class as the existing stock, a new SEA will not be required. The work plan has been revised on page 3 to clarify this point.

#### **Procurement and Logistics**

##### Procurement of IRS Materials

A logistics assessment and inventory was conducted by RTI after the end of 2008 campaign. This assessment was based on the total population to be protected (approximately 521,738 people) and the quantities of PPE and insecticide that remained at the end of the 2008 spray operations. Below are the quantities and items to be procured for the 2009 spray round.

Table 1. Pesticides and related supplies to be procured

Item	Quantity
Debit regulator Ref No 64 Catalog No 148.000X	200
Gloves - Latex Nitrile	2,850
Pregnancy test kits (with French/English labels)	180
First Aid Kits (each kit to serve 10 people with French/English labels)	72
Insecticide - Bendiocarb	1,400 kg or 11,200 sachets of 125g

RTI will arrange for the procurement, shipping, delivery, storage and security of all commodities. Through its procurements systems or subcontractor Crown Agents USA, RTI will take the responsibility for competitive procurement, safe transport and delivery of IRS commodities.

### Management of IRS Materials

Pesticides and related supplies for the counties of Sèmè-Kpodji, Dangbo, and Akpro-Misséréte will be stored during spray operations in the Porto Novo warehouse. For the County of Adjohoun, RTI will establish a temporary secondary storage facility. The storage facility will be replenished with pesticide from the Porto Novo warehouse on a weekly basis. Records of entry and exit will be maintained by the warehouse staff.

### IEC Development and Implementation

The IRS IEC campaign focuses on providing immediate information about malaria prevention and IRS to its primary audiences and strives to create long term sustainability through its secondary and tertiary audiences. The specific objectives of the IRS IEC campaign are to:

- Inform beneficiaries about the positive benefits of IRS in controlling and preventing malaria and malaria related deaths
- Inform beneficiaries about their role before, during, and after the spray operations
- Inform key stakeholders and beneficiaries about safety issues related to the environmental and health effects of using insecticides

### Training of IEC Mobilizers

Training for IEC mobilizers will be conducted in close collaboration with the PNLP and DDS. RTI will work with the head doctors, heads of post, mayors, and village leaders to identify IEC mobilizers and to leverage existing community communication channels. As one of the challenges in the 2008 spray round was the shortage of IEC mobilizers used during spray operations, RTI will work with USAID/Benin and PNLP to recruit a sufficient number of mobilizers to cover each village. A five day training of trainers (TOT) will be conducted by RTI in conjunction with personnel from the PNLP, district of Ouémé, and the MOE. Mobilizer

training will be supervised by an RTI IEC consultant, the IEC coordinator from the PNLN, DDS, and the head of post in each township.

## **IEC Campaign Implementation**

RTI will develop an IEC campaign implementation plan based on the information gathered by the RTI team during 2008 spray operations. Developed in collaboration with the PNLN, the plan will include existing IEC tools adapted from 2008 experience to conduct community mobilization campaigns. The most efficient mobilization methods used in the 2008 campaign will be replicated, including village gatherings and door-to-door visits to explain the purposes, benefits, and precautions associated with IRS and to answer questions. The IEC campaign will begin at least four weeks prior to the start of the spray operations.

During IEC mobilization, village leaders, religious leaders, and other organizations and associations operating in the area will be contacted to be part of the mobilization process throughout the IRS campaign. These leaders will be fully engaged in order to reinforce community mobilization, as they are best placed to convince the population to accept IRS. This strategy was used during the latter part of the 2008 spray operation and contributed to the increase of the acceptance rate.

## **Coordination with Spray Operations**

RTI's Logistics Manager and district officers will update the geographical reconnaissance maps created for 2008 operations. These maps will enable IEC mobilizers to know exactly where spray operations will take place, enabling them to notify homeowners one or two days prior to actual spraying.

## **Indoor Residual Spraying Operations**

### **Recruitment and Orientation**

Rather than conducting recruitment, RTI will utilize the health system already in place in Benin. The MOH already has in place a system of health workers working with partner organizations and trained in health programs. This system of workers includes the Service d'Hygiene (Hygiene Service) staff from health centers and district health offices. In the 2008 IRS campaign, RTI trained Service d'Hygiene workers in IRS operations and as in the last spray operations, they will supervise spray operations.

The role of each position involved in spray operations has been clearly defined and will be communicated to all staff as follows:

#### **Spray operator**

- Carry enough data collection forms
- Use PPE at all times
- Respect the household and household property
- Remind beneficiaries to remain outside the house
- Clean and maintain spraying equipment at the end of each spray cycle

- Observe IRS best practices
- Record all data according to instructions
- Present fully and duly completed data forms to the team leader and make corrections as need may arise
- Thank members of the household after application of insecticide

#### Team Leader

- Supervise the work of four spray operators
- Ensure spray operators follow the correct procedure for mixing, spraying and maintaining spray quality
- Ensure that data forms are accurately and promptly completed at the end of each spraying day
- Submit summary of spray operations to the IRS supervisor each day
- Ensure stickers are applied to all sprayed structures
- Record field experience and lessons learnt each day, to be shared on a daily basis before spray operators depart to the field
- Ensure the standard spraying procedure developed by RTI is rehearsed on a daily basis
- Ensure equipment is cared for and cleaned daily
- Ensure each spray operator is fully protected at all times with PPE and protects the environment and the community

#### IRS Supervisor

- Supervise spray teams in the field
- Ensure the quality of the spraying
- Inspect houses to ensure that all belongings are properly packed and covered before allowing the spray operators to commence spraying
- Carry a flashlight and inspect spraying quality in dark rooms
- Ensure each structure carries a sticker before adding the supervisor's sticker or countersigning it
- Solve problems arising in the field
- Ensure community compliance
- Keep IRS spraying diary and complete the supervisor's checklist

### Capacity Building

Each county will have several monitors, including field monitors from DDS, health sector personnel, PNLP staff, and as necessary, additional quality control (QC) monitors from RTI to augment this vital component. These individuals will be tasked with monitoring the quality of the IEC campaign, the quality of the spraying performed by the operators, and the proper use of protective gear. They will provide on-the-spot corrections and/or dismiss personnel when necessary for serious issues. In addition, they will perform unannounced roll calls to ensure everyone is present, and will audit spray cards against homes recorded. They will also interact with the population served and determine the level of service satisfaction in areas of IEC and spraying.

RTI will strengthen the capacity of the PNL and the district malaria control entities to enable them to conduct proper IRS planning, organization, and management, and to undertake safe and effective IRS independently in the future. This strengthening will be through hands-on knowledge and skills transfer to the district staff, through:

- Inclusion of staff in ongoing training activities (TOT on spraying and pesticide management, IEC, etc.) to improve knowledge in key skill areas.
- Engaging relevant (trained) staff in field supervision and at various levels of IRS operations.
- Fostering competencies in program planning and evaluation through participation in micro-planning, program review, and post-spray stakeholder evaluation meetings.
- Ensuring that roles of the trained staff are gradually and progressively increased in successive IRS operations, with RTI staff providing hands-on mentoring and guidance.
- Utilizing a mentoring and TOT approach to develop increased operational capacity within the program, and to increase the technical skills of district and county-level staff.
- Providing field training opportunities in the form of “learning by doing” to county officials such as environmental managers and malaria control workers on environmental monitoring.
- Building a pool of trained spray operators, IEC competencies, and supporting the orientation of medical personnel in pesticides poisoning management.

## Environmental Mitigation

As in the 2008 spray operations, RTI will work closely with the district offices of the MOE and the MOA, who will provide qualified staff for monitoring overall environmental safety and compliance with the environmental guidelines of their respective agencies and those of USAID. These individuals will be tasked with monitoring the safe handling of insecticide, the proper use of protective gear, the proper construction and marking of areas designated for washing equipment, the proper disposal of rinse water, and other environmental best practices. They will work in close collaboration with the RTI environmental specialists based in the RTI regional office in Nairobi and the RTI environmental consultant in Cotonou, who will take the lead on QC, an important function that is played by RTI during the IRS operations.

To mitigate adverse impacts during spray operations, RTI will:

- Anticipate adverse impacts on human health and livestock to avoid, mitigate, compensate and correct before cumulative effects are experienced.
- Provide World Health Organization (WHO) standard PPE to all spray teams for IRS activities.
- Train all spray teams and drivers on good spraying techniques and how to respond in cases of emergency.
- Create awareness and sensitize targeted populations to the “do’s and don’ts” before and after spraying to reduce exposure incidents.
- Undertake pregnancy testing for all female spray candidates and general physical testing for all spray teams.

RTI will conduct training for all surrounding health care facility personnel on emergency response to acute pesticide poisoning.

RTI will use the Porto Novo warehouse and the secondary storage facility in Adjohoun, both of which are located in environmentally sound sites, and will also ensure that they are secured to avoid pilferage. The team will ensure the proper disposal of post-spray pesticide residue and that all empty pesticide sachets and unused pesticides are locked securely until an appropriate disposal mechanism has been identified, such as incinerating the sachets locally.

## Recruitment and Training for Spray Teams

RTI will rely on the medical chief of each county to recruit spray operators. Training of spray operators will be conducted in a fashion similar to that of the IEC mobilizers. These preparatory and training activities will be conducted jointly with the vector control unit of PNLN, and the malaria focal point of Ouémé district:

- Planning for TOT and IEC
- Conducting TOT, and training for sprayers and IEC mobilizers
- IEC implementation

Spray operators will be organized into teams with the number of operators and teams varying based on the number of villages, population, and households to be sprayed within the time frame of the operation – in this case, about 50 to 66 actual work days, including the hanging of LLINs. The training of spray operators will be conducted over five days. All teams will be trained together at the Porto Novo warehouse.

RTI neither participates in nor seeks to influence the process of selecting potential personnel to be deployed in each IRS round. This task is instead performed by the relevant local authorities, using the agreed upon eligibility criteria jointly developed by RTI and PNLN, for selection of spray operators and IEC mobilizers. All spray operators and IEC mobilizers will be recruited from within the targeted counties. RTI will conduct medical examinations for the spray operators before and after operations.

## Logistics Support for Spray Operations

RTI will arrange for an adequate numbers of vehicles to transport spray teams. Team vehicles will be based at the Porto Novo warehouse and at the secondary storage facility in Adjohoun. Every morning, teams will be transported to various villages in the counties. Transportation will also be provided for supervisors involved in the duties of program monitoring.

Initial commodities will be delivered by Crown Agents and sent directly to Porto Novo. The COP, Operations Coordinator, and Logistics Officer will make arrangements for an inventory and for the storage of items in the warehouse. All materials and equipment will be subject to a strict control process with particular emphasis on the chain of custody of insecticide.

## Post-spraying Operations

All equipment will be stored in the Porto Novo warehouse. All PPE will be cleaned, fixed, and stored for use in the following round. If there is remaining pesticide, it will be stored based on the instructions from the USAID team in Benin, PNLN, and the MOE.

Post spray operations will be conducted in collaboration with the PNLN and the MOE. An end of spray round report will then be submitted to USAID. The purpose of the end of round meeting is to enable the IRS partnership to discuss observations from the IRS campaign and to note lessons learned, discuss the hand over of activities to the government through the sustainability chart, and generally to share the epidemiological outcomes of the IRS campaign.

Immediately after the end of the spray round, RTI staff will begin to work in collaboration with PNLN and CREC in planning and preparation for the 2010 spray round, as preparations for a spray round and IRS planning activities should start at least 6 months before the next round.

## Other Activities

### Entomological Monitoring

Entomological monitoring will be carried out by the CREC. The distribution and seasonality of the vector species, the vector species' susceptibility to insecticides and the duration of residual effect of the insecticide will be determined.

The complete scope of work of RTI's subcontract with CREC consists of the following:

**Project A:** "Implementation of a vector control strategy based on a combination of a pyrethroid LLIN + a non-pyrethroid IRS at the community level to assess protective efficacy against malaria in an area where *Anopheles gambiae* s.s. has a high level of pyrethroid resistance"

**Project B:** "Entomological and sociological evaluation in IRS target areas"

**Project C:** "Evaluation of new technology to determine when LLINs need to be replaced"

**Project D:** "Support for national vector surveillance program"

As you have corrected pointed out, like last year, project B monies are only a pass-through.

### IRS Steering Committee

The IRS steering committee is a task force composed of stakeholders including the PNLN, the Ministry of Agriculture, the Ministry of Interior, the Ministry of Family, the Ministry of Environment, CREC and the Faculty of Health. Committee meetings will be held quarterly, and the cost of these meetings are already included in the budget under "workshops."

## Sustainability Plan

IRS sustainability is a priority for USAID/Benin and the MOH. The RTI Benin team will work closely with all the country partners involved in the fight against malaria, including PNLP, USAID, WHO, and the MOE, to transfer capacity at all levels. An IRS sustainability plan that outlines how responsibilities for IRS activities will be transferred from RTI to PNLP during the next 3 years will be developed. RTI will begin working on developing this plan following assessment of the upcoming spray round. Through a joint analysis by RTI and its implementing partners, RTI will arrive at those activities which the GoB partners will feel prepared to take on as the primary implementer. Table 2 illustrates the proportional responsibilities each partner will undertake for each IRS task and it shows the expected progression over time.

This sustainability plan is intended for implementation. The aim is to build national capacity so that the MOH can conduct IRS by itself with minimum supervision. Capacity building in Benin is a long-term goal since there were no capacities in this area as recently as a few months ago.

Regarding TOT/training of sprays operators, MOH staff have been involved in this activity since 2008. Three professional staff from the NMCP were trained last year and were supposed to take part in training this year. However, none of them was available for this round. The malaria focal point in the district directorate of health (DDS) and the head of the environmental department at Ouémé-Plateau, respectively, conducted training this year on supervision and environmental compliance, under the supervision of RTI trainers. The training of sprays operators was conducted at the commune level by the public health agents (“agents d’hygiene”) under the supervision of the DDS and the médecin chefs of each commune. We expect that the MOH staff will be at post next year in order to conduct the IRS training under RTI supervision, however, RTI/Benin has no control over staff movement into the MOH .

Table 2. IRS Sustainability Plan

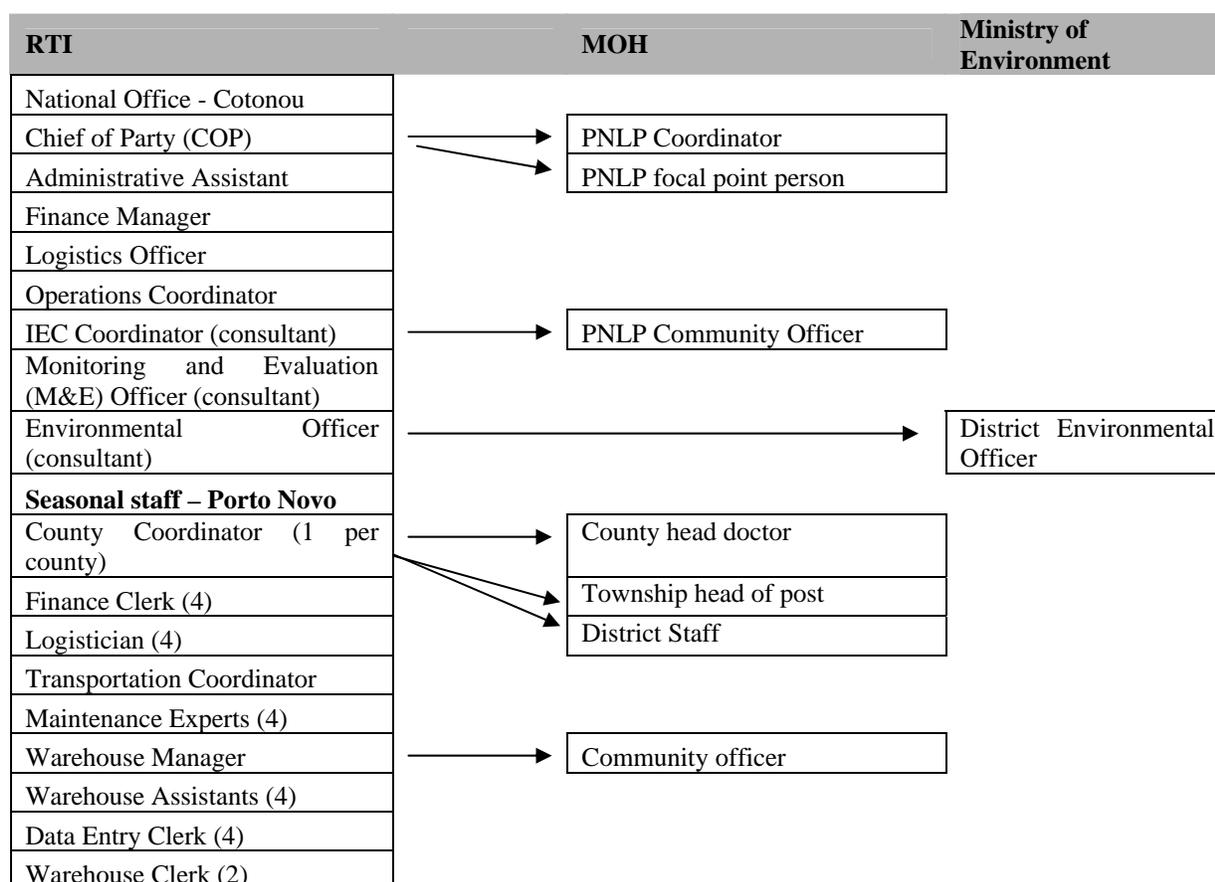
Activity	Proportional Responsibility (%)							
	Round One (2008)		Round Two (2009)		Round Three (2010)		Round Four (2011)	
	MOH	RTI	MOH	RTI	MOH	RTI	MOH	RTI
<b>Partnership development</b>								
Establish IRS oversight committee	50	50	80	20	90	10	90	10
<b>Environmental compliance</b>								
Do an Environmental Assessment	0	100	20	80	50	50	80	20
Prepare an Environmental monitoring Plan	0	100	20	80	40	60	50	50
Do an Environmental compliance inspection	0	100	10	90	20	80	50	50
<b>Entomological surveillance</b>								
Identify and train entomological technicians	100	0	100	0	100	0	100	0
Do Baseline survey	100	0	100	0	100	0	100	0
Periodical surveys	100	0	100	0	100	0	100	0
<b>IEC Program</b>								
Informational research	0	100	50	50	90	10	90	10
Training of IEC mobilizers	0	100	50	50	70	30	90	10
Development of materials	0	100	10	90	20	80	40	60
Pre-IRS IEC mobilization activities	10	90	50	50	70	30	90	10
IEC coordination during IRS	0	100	50	50	70	30	90	10
Post spray IEC survey	10	90	40	60	50	50	50	50
<b>Logistics procurement and management</b>								
Field visit to do logistics needs assessment	10	100	50	50	60	40	60	40
Procurement	0	100	0	100	0	100	0	100
Logistics – distribution & delivery	0	100	10	90	50	50	50	50
Micro-planning	30	70	50	50	50	50	50	50
Logistics chain of custody	0	100	10	90	30	70	30	70
<b>IRS operations</b>								
Geographical reconnaissance	10	90	20	80	40	60	40	60
Training of Trainers and of sprayers	0	100	20	80	20	80	20	80
Spray operations campaign	40	60	20	80	20	80	20	80
Post spray Activities	50	50	50	50	80	20	80	20

Regarding the development of a long-term IVM strategy in conjunction with the PNLP, the IVM2 project, also implemented by RTI, initiated discussions on this issue with the Mission and the PNLP in 2008. The IRS IQC TO1 work plan does not include any IVM activities as it addresses the FY09 MOP for Benin, which also does not include any IVM activities. However, RTI would be happy to discuss such a long-term strategy with the USAID Mission, the MOH, and with Dr. Akogbeto of CREC for the future.

## IV. Management Plan

### Staffing, Structure, and Roles and Responsibilities

Table 3. Organizational chart



The RTI office in Cotonou is staffed with a Chief of Party, an Operations Coordinator, a Finance Manager, a Logistician, and an Administrative Assistant. The COP will facilitate direct interactions with the USAID Mission, the Ministry of Health, and the PNL. Furthermore, the COP will work with the Home Office Technical Manager (HOTM) to maintain supportive links with RTI's US-based home office and the IRS IQC regional office in Nairobi, Kenya. The RTI office in Benin will seek support from and work closely with the RTI Regional Office in Nairobi for technical and administrative matters.

RTI Benin will hire three consultants in IEC, monitoring and evaluations, and environmental compliance during the spray operations. These consultants will work in close collaboration with the Ministry of Health and the Ministry of Environment.

RTI Benin will provide technical assistance and support in all IRS activities including training of IRS personnel, monitoring activities, supervision, and the development of an IEC plan during IRS operations to educate targeted communities on the importance of IRS.

To assist county health offices with management, administration and logistics of IRS activities, RTI will have seasonal personnel based in the counties throughout the spray operation to supervise and monitor the quality of operation. They will report to the RTI COP.

Table 4. Total spray personnel

County	# Villages	Est. pop.	Est. HH	Est. rooms	# IRS operators (44 days)	# Team leaders	# Super-visors	IEC moni-tors	Total spray personnel
Akpro-Misserete	57	140,965	41,575	105,898	50	10	5	1	66
Dangbo	41	57,974	17,366	44,541	35	7	3	1	46
Seme Kpodji	38	205,377	52,536	136,223	75	15	7	2	99
Adjohoun	55	117,422	40,305	101,793	45	9	4	1	59
Total	191	521,738	151,782	338,455	205	41	19	5	270

The number of spray operator has been estimated based on a logistics assessment. In addition to the numbers of structures to spray, the estimation of the numbers sprayers takes into consideration travel times between the base of operations and the villages, the distances between structures within the villages, and general geographical accessibility. Many of these villages consist of multiple hamlets not accessible by car, and sprayers are often forced to walk to reach the structures. All these considerations explain the difference between the numbers of sprayers across the counties.

For example, Dangbo County has a higher ratio of sprayers to structures at 1:795, because the villages in this county are highly inaccessible, and distances between structures and between hamlets within villages are relatively large. Therefore more sprayers are required due to higher labor intensiveness. On the other hand, in Adjohoun County the ratio of sprayers to structures is very low at 1:1,779, because travel distance from operations base to villages, between villages and structures within villages are small and accessibility is relatively much higher than average.

### Strategic Technical Assistance

Planned short-term technical assistance is as follows (see Table 5):

- Home Office Technical Manager (HOTM) Barmak Kusha will travel to Benin twice to support this work plan. He will provide support to RTI's on-the-ground team for partner and stakeholder relations, and extraction of end of spray round lessons and workshop planning.
- As IRS TO1's Vector Control Manager and as the COP's supervisor, Jean Desire Rakotoson (based in Nairobi) will travel to Benin twice to provide technical assistance for spray operations, and to facilitate entomological assessments by working with the team on the ground to introduce the entomological standard operating procedures. He will supervise the

TOT and the training of spray operators, and he will participate in the end-of-spray round meeting and share in the lessons learned.

- Environmental Inspector Gaspard Bikwemu travel to Benin three times to conduct the pre-, mid-, and post-spray environmental inspections.
- Regional Director of Operations for IRS TO1 Suzanne Hoza will travel to Benin once to provide overall country program operational support and ensure that the program is following best practices in IRS.

Table 5. Strategic Technical Assistance Plan

Name	Type of TA	Coming from	Tasks to be undertaken or activities to be supported	Number of visits
Barmak Kusha, HOTM	RTI Employee, international	USA	End of spray round workshop planning and attendance. Partner and stakeholder relations	2
Jean Desire Rakotoson, Vector Control Manager	RTI Employee, international	Nairobi	Support TOT and SOT. Facilitate entomological assessments via introduction of ento. SOPs. Support end of spray round activities.	2
Gaspard Bikwemu, Environmental Inspector	RTI Employee International	Nairobi	Conduct pre-, mid-, and post-spray environmental inspections.	3
Suzanne Hoza, Regional Director of Operations	RTI Employee International	Nairobi	Provide overall country program operational support; ensure that IRS best practices are followed.	1

RTI will provide additional technical assistance based on needs identified by the PNLN and agreement upon with USAID/Benin.

## V. Monitoring and Evaluation

RTI, in collaboration with the PNLN will report on spraying activities and results as required by USAID.

### Indicators

#### PMI Indicators

RTI will report on the following core indicators:

- IRS coverage: the proportion of sprayable structures found by spray operators which were actually sprayed
- Capacity building: the numbers and types of personnel trained in IRS
- Population protected by IRS: The number of people sleeping in structures that have received IRS

RTI will also report on the following additional indicators:

- Supervisory ratio describing the number of team leaders and spray operators reporting to each supervisor
- Number of insecticide sachets in stock

- Percentage of empty sachets returned
- Percentage of empty sachets disposed
- Proportion of health facilities at which health workers have been trained treating cases of pesticide poisoning and exposure
- Percentage of female spray operators tested for pregnancy during spray operations

## Other Indicators

RTI will report on the following indicators:

- Number of pregnant women sleeping under LLINs the previous night
- Number of children under 5 years old sleeping under LLINs the previous night
- Number of people who receiving training in malaria prevention (by gender)
- Number of national and local health officials who participated in leadership roles for IRS planning or implementation during the last reporting period

## Information Collection Plan

Records and forms used by spray operators, team leaders, supervisors, and IEC mobilizers will be used to gather information from the field daily. This information will then be compiled by the data clerks and sent to the M&E officer.

## Reporting Requirement

During spray operations, reports will be sent every other day to the Mission, the IRS task force team, and other relevant partners to provide them information about the spray operations.

RTI will consult with USAID/Benin and PNLP to confirm the formats and schedule for the following reports:

- Environmental Assessment report
- Logistics Assessment report
- Weekly progress reports with preliminary coverage information
- Post Spray Evaluation Report
- End of Round Spraying Performance Report

## Attachment 2: Benin Implementation Plan and Timeline

For period from January 2009 to December 2009

Component	Activity	Person/ Responsible partner	Project Month												Key Milestones	
			J	F	M	A	M	J	J	A	S	O	N	D		
<b>Planning and Assessment</b>	Conduct logistics assessment.	Eugene Kiti, Lazare D'Almeida														Logistics assessments complete.
	Microplan: Meet with PNL, CREC, District of Ouémé, MOE, CNAC, MOA, and others	RTI Benin														Micro-plan complete and approve
<b>Procurement and Logistics</b>	Develop technical specifications.	Crown Agents, RTI														Technical specifications released. Vendors selected. Insecticide, PPE and equipment delivered
	Release tender notice for procurements.	Crown Agents														
	Review and select vendors.	Crown Agents														
	Receive and inventory insecticide, PPE, and equipment.	Crown Agents, RTI														
	Transport equipment and materials to storage facilities and conduct inventory.	Crown Agents, RTI														
	Maintain records of entry and exit in storage facilities.	RTI M&E, Operations Manager														
<b>IEC Development &amp; Implementation</b>	Identify IEC mobilizers.	RTI, PNL, DDS														Needs assessment completed. IEC materials produced. Training completed. Campaign launched.
	Train IEC mobilizers.	IEC RTI consultant, PNL IEC coordinator, DDS														
	Establish contact and brief village leaders.	RTI, PNL, DDS														
	Conduct village gatherings and door-to-door visits.	IEC mobilizers														
	Disseminate IEC messages through media.	RTI, PNL														
	Develop geographical reconnaissance map to inform IEC activities during spraying.	Logistician, county officers, Operations Manager														
<b>Spraying Operations</b>	Conduct geographic planning.	RTI and regional health officers														County staff recruited and trained. Medical check-ups completed. Training completed. Spraying launched. Spraying completed. Equipment and supplies recaptured.
	Monitor environmental safety and compliance with environmental guidelines.	RTI, MOE, MOA														
	Train health personnel and equip health centers to respond to pesticide poisoning.	RTI, PNL														
	Do TOT and train spray operators.	RTI, trained trainers from Service d'Hygiene														
	Identify and secure transportation for spray teams.	RTI														

Component	Activity	Person/ Responsible partner	Project Month												Key Milestones		
			J	F	M	A	M	J	J	A	S	O	N	D			
	Conduct spraying activities and LLINs hanging in houses.	RTI, PNLP, MOE															
	Collect, clean, and store equipment and remaining pesticide for next round of spraying.	RTI, PNLP, MOE															
	Submit data and report to USAID, IRS task team and stakeholders.	RTI															
<b>Monitoring &amp; Evaluation</b>	Conduct an internal compliance inspection and submit report to stakeholders.	RTI, PNLP, trained supervisors, MOE, trained Service d'Hygiene															M&E reports submitted to USAID. Post-round evaluation completed.
	Conduct an internal pre-e and post-compliance inspection and submit report to stakeholders.	Gaspard Bikwemu (RTI Environmental inspector)															
	Conduct monitoring of number of people trained on the IRS project.	RTI															
	Conduct monitoring of number of insecticide sachets used per household sprayed.	RTI															
	Prepare end of spray report, submit to USAID and present it to IRS task force.	RTI															
	Prepare for the next IRS round.	RTI															

## Attachment 2: Benin Countdown Calendar

For period from January 2009 to December 2009

Component	Key Milestone	Date to be Completed	Status (e.g., date achieved)	Antecedent to:
<b>Project Start-up/ Mobilization</b>	Country work plan approved by USAID	January 2009		Producing MOU and/or aid memoires
	MOU/aide memoire signed with government and/or key partner	January 2009		Initiating planning activities with government and/or key partners
<b>Planning and Assessment</b>	Logistics assessment completed		Completed on January 2009	Planning scope and scale of operations and procurement to be required
	Microplan with MOH (PNLP/DDS)		January 2009	Microplan complete.
<b>Procurement &amp; Logistics</b>	Technical specifications for tenders approved and released	January 2009		Ordering supplies for spraying
	Vendor selection and procurement process completed	January 2009	Procurement in process	Delivery of supplies for spraying
	Insecticide and PPE delivered	February 2009	Procurement delivered in February 2009	Initiation of spray operations
<b>IEC Development &amp; Implementation</b>	IEC needs assessment completed		Completed on February 2009	IEC material design
	IEC material designs and implementation plan approved		Completed on February 2009	Production of materials
	IEC materials produced and delivered to project	Printing of Materials to be completed January-February 2009	IEC brochures and supporting documents have been validated and approved by all partners in February 2009	Training of IEC mobilizers
	Training of IEC mobilizers completed	February 2009	2 <sup>nd</sup> week of February 2009	Implementation of IEC campaign
	IEC campaign launched		2 <sup>nd</sup> week of February 2009	Spraying operations
	<b>Spraying Operations</b>	Geographic reconnaissance completed	January 2009	
County staff recruited, oriented and trained		February-March 2009		Completion of operational logistics and EM set up
Operational logistics and environmental mitigation set		February –		Spraying operations

	up at operational sites	March 2009		
	Medical check-ups (including pregnancy tests) for sprayers, supervisors, warehouse staff, cleaners, etc. completed	February – March 2009		Permission to spray
	Training of spray operators completed	March 2009		Spraying operations
	Spray operations launched	March 2009		
	Spraying operations completed	March- April 2009		Recapture and proper management of equipment and supplies
	Equipment and supplies recaptured and securely disposed or stored	May – June 2009		Environmental compliance
	Post-spraying evaluation conducted	May – June 2009		Final report production
	Final report produced and submitted to USAID	May – June 2009		
<b>Other Operations</b>	Initiate activities for next spray round (this needs to be initiated at least 6 months prior to the next round)	July – August 2009		