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# THE PMI VECTORLINK BURKINA FASO 2020 END OF SPRAY REPORT (EOSR)

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# THE PMI VECTORLINK BURKINA FASO 2020 END OF SPRAY REPORT

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# 1. Acronyms

| | |
|---|---|
| BMP | Best Management Practices |
| BUNEE | National Bureau of Environmental Assessment (Bureau National des Evaluations Environnementales) |
| COP | Chief of Party |
| COVID-19 | Coronavirus Disease 2019 |
| CNRFP | National Malaria Research and Training Center (Centre National de Recherche et de Formation sur le Paludisme) |
| CSPS | Center for Health and Social Promotion (Centre de Santé et Promotion Sociale) |
| DCV | Data Collection Verification |
| DHMT | District Health Management Team |
| DS | Health District (District Sanitaire) |
| DRS | Regional Health Directorate (Direction Régionale de la Santé) |
| ECO | Environmental Compliance Officer |
| ICP | Health Post Nurse (Infirmier Chef de Poste) |
| IEC | Information, Education, and Communication |
| IRS | Indoor Residual Spraying |
| IRSS | Institute of Research on Health Sciences (Institut de Recherches en Sciences de la Santé) |
| ITN | Insecticide Treated Nets |
| M&E | Monitoring and Evaluation |
| MOH | Ministry of Health |
| NMCP | National Malaria Control Program |
| PMI | President's Malaria Initiative |
| PPE | Personal Protective Equipment |
| PSECA | Pre-Season Environmental Compliance Assessment |
| SAPHYTO | African Company of Phytosanitary Products and Insecticides (Société Africaine de Produits Phytosanitaires et d'Insecticides) |
| SEA | Supplemental Environmental Assessment |
| USAID | United States Agency for International Development |
| WHO | World Health Organization |

# 2. EXECUTIVE SUMMARY

One key objective of the U.S. President's Malaria Initiative (PMI) VectorLink Project is to limit exposure to malaria vectors and reduce the incidence and prevalence of malaria through indoor residual spraying (IRS). In 2020, the PMI VectorLink Burkina Faso project conducted spray operations from June 01 to June 26, 2020 with a spray target of 135,141 structures and a goal of protecting 405,270 people in the following districts in Burkina Faso: Kampti (South-West Region) and Solenzo (Boucle de Mouhoun Region). The project sprayed clothianidin (SumiShield 50 WG) in Solenzo and clothianidin and deltamethrin combination (Fludora® Fusion) in Kampti. The spray target was initially based on a total of 220,482 structures with a goal of protecting 770,000 people in three districts (Solenzo, Kampti and Kongoussi). However, this target was reduced to 135,141 structures due to the exclusion of the district of Kongoussi for security reasons.

The following are project achievements and key highlights of the Burkina Faso's 2020 spray campaign:

- The project sprayed a total of 162,037 structures out of 171,276 eligible structures found by spray operators (SOPs) and achieved the 135,141 targeted structures in the two IRS districts, accounting for a final spray coverage rate of 94.60 percent and a spray progress rate of 119.90 percent.
- The project protected 508,017 people from the burden of malaria in 2020, including 95,445 (18.78 percent) children under five years old and 21,103 (4.15 percent) pregnant women.
- A total of 1,493 people were trained, of whom 245 (17.09 percent) were women. Out of the total number of people trained, there were 521 spray operators (SOPs), of whom 93 (17.85 percent) were women.
- A total of 31,029 sachets of SumiShield 50 WG were used in the district of Solenzo and 6,099 sachets of Fludora® Fusion in Kampti. The utilization ratios were: 4.4 structures per SumiShield sachet in Solenzo, 4.4 structures per Fludora® Fusion sachet in Kampti. The remaining insecticide quantity at the end of the 2020 spray campaign is 621 sachets of SumiShield 50 WG set to expire in December 2022 and 15 sachets of Fludora® Fusion set to expire in February 2022.
- During the first two weeks of the campaign, the project conducted cone bioassays to assess the quality of the spray. The results indicated 100 percent mortality for the two brands of insecticides sprayed (SumiShield 50 WG and Fludora® Fusion).
- VectorLink Burkina Faso continued to use the VectorLink Collect database (DHIS2) to monitor the spray progress electronically on a daily basis.
- The PMI VectorLink Burkina Faso team strenghtened Information, Education, Communication (IEC) messaging during the campaign in collaboration with local radio stations and organized advocacy meetings in the two districts with traditional leaders and local authorities prior to and during the spray campaign to minimize refusal rates.
- The project will incinerate all insecticide-contaminated wastes, including used masks and empty sachets of SumiShield 50 WG and Fludora Fusion at the African Company of Phytosanitary Products and Insecticides (Société Africaine de Produits Phytosanitaires et d'Insecticides: SAPHYTO).

**Table 1: VectorLink Burkina Faso 2020 IRS Campaign Summary**

| | Kampti | Solenzo | Total |
|---|---|---|---|
| Insecticide used | Fludora Fusion: 6,099 | SumiShield: 31,029 | 37,128 |
| Total targeted structures | 24,377 | 110,764 | 135,141 |
| Cumulative structures found by SOPs | 32,347 | 138,929 | 171,276 |
| Cumulative structures sprayed | 26,642 | 135,395 | 162,037 |
| Population in sprayed structures | 87,504 | 420,513 | 508,017 |
| Population of pregnant women in sprayed structures | 3,054 | 18,049 | 21,103 |
| Population of children under five in sprayed structures | 16,216 | 79,229 | 95,445 |
| Spray progress (%) based on targeted structures | 109.3 | 122.2 | 119.90 |
| Spray coverage (%) (based on structures found by SOPs) | 82.4 | 97.5 | 94.60 |
| Total number of people trained to deliver IRS in targeted areas | 444 | 1,049 | 1,493 |
| Female | 62 | 183 | 245 |
| Male | 383 | 806 | 1,189 |

# 3. Country Background & Activity Summary

In Burkina Faso, PMI supported indoor residual spraying (IRS) in one district (Diebougou) from 2010 to 2012, in three districts (Kampti, Solenzo and Kongoussi) from 2018 to 2019, and in two districts (Kampti and Solenzo) in 2020.

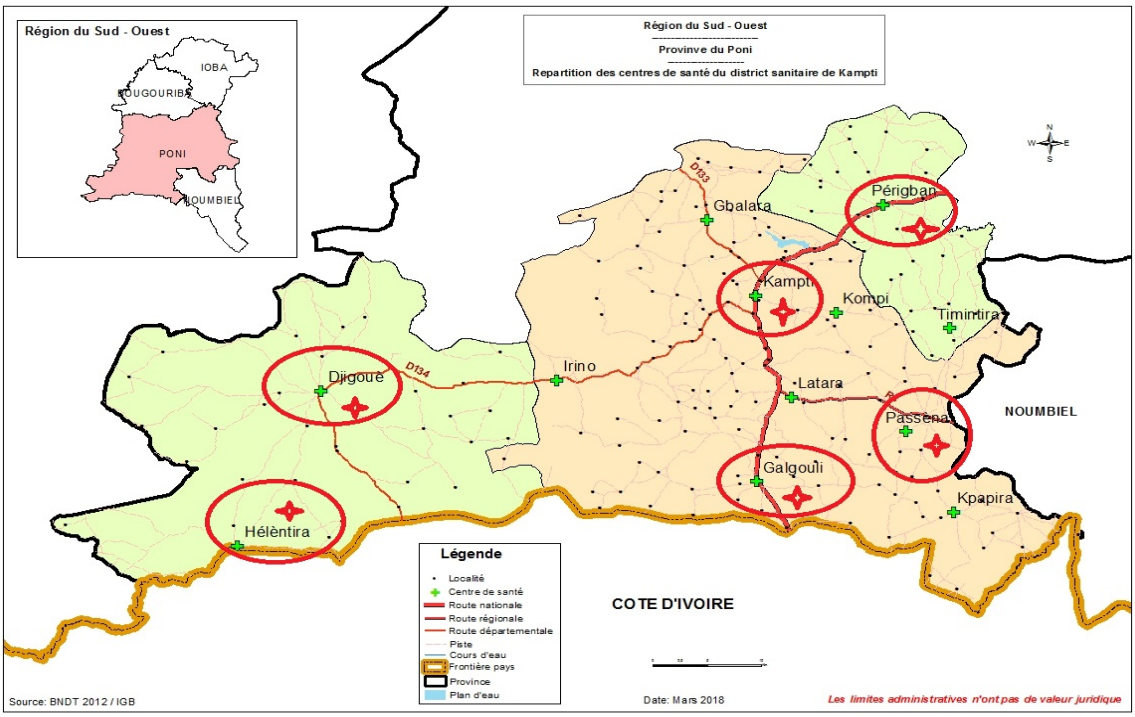
**Table 2: PMI Supported IRS in Burkina Faso: 2012-2020**

| Year | Geographic Area | IRS Strategy | Insecticide | Number of Structures Sprayed | Population Protected |
|---|---|---|---|---|---|
| 2010 | South-West (Diebougou district) | Blanket | Bendiocarb (Carbamate) | 33,897 | 118,691 |
| 2011 | South-West (Diebougou district) | Blanket | Bendiocarb (Carbamate) | 33,832 | 110,064 |
| 2012 | South-West (Diebougou district) | Blanket | Bendiocarb (Carbamate) | 37,167 | 116,138 |
| 2018 | South-West (Kampti district)<br>Center-North (Kongoussi district)<br>Boucle de Mouhoun (Solenzo district) | Blanket | SumiShield (Clothianidin)<br>Actellic® 300 CS (Organophosphate) | 258,766 | 766,374 |
| 2019 | South-West (Kampti district)<br>Center-North (Kongoussi district)<br>Boucle de Mouhoun (Solenzo district) | Blanket | Fludora Fusion (Clothianidin + Deltamethrin combination)<br>Actellic® 300 CS (Organophosphate)<br>SumiShield (Clothianidin) | 201,901 | 587,248 |
| 2020 | South-West (Kampti district)<br>Boucle de Mouhoun (Solenzo district) | Blanket | Fludora Fusion (Clothianidin and Deltamethrin combination)<br>SumiShield (Clothianidin) | 162,037 | 508,017 |

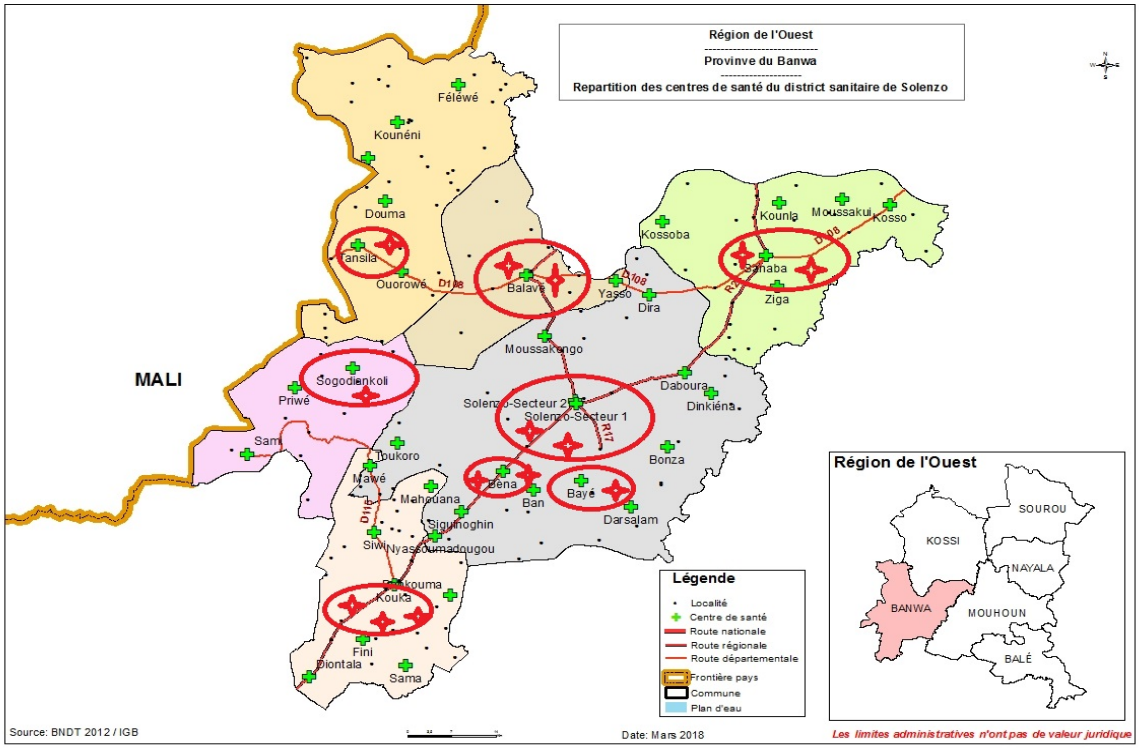
In 2020, the VectorLink Burkina Faso project implemented the 2020 IRS campaign in close collaboration with PMI, National Malaria Control Program (NMCP), Ministry of Health (MOH), Ministry of Environment, National Bureau of Environmental Assessment/Bureau National des Evaluations Environnementales (BUNEE), Regional Directorate of Health/Direction Régionale de la Santé (DRS), Provincial Environmental Services, and District Health Management Teams (DHMTs), in the two target districts.

**Figure 1: PMI VectorLink Burkina Faso 2020 IRS Districts**

## KAMPTI




## SOLENZO



# 4. IMPLEMENTATION OF IRS ACTIVITIES

## 4.1. IRS PLANNING AND PARTNERS' COLLABORATION

The VectorLink Burkina Faso Project met regularly with PMI Burkina, NMCP, DRS and DHMT to discuss the 2020 IRS campaign planning and implementation. The project and the NMCP conducted the National Planning Meeting (April 22, 2020) and the training for core trainers (April 24, 2020). The micro-planning workshop took place in the two districts with all relevant stakeholders to adopt the final plans for completing the 2020 IRS campaign. The project implemented the 2020 IRS campaign from June 1 to June 26 (20 operational days) in two districts: Kampti and Solenzo. The project managed spray operations out of 20 operational sites (six in Kampti and fourteen in Solenzo). Each operational site had a warehouse to store spray materials as well as a permanent soak pit fto accommodate the spray teams during the end-of-day clean-up. The NMCP, in collaboration with VectorLink, led supervisory activities for IRS operations in both districts as part of its national IRS leadership and capacity building management. Table 3 below shows the location of operations sites and status of warehouses.

The project, in collaboration with NMCP, developed a contingency plan related to IRS implementation in the context of COVID-19 pandemic. The contingency plan outlined detailed mitigation measures that would ensure the safe implementation of spray activities for all spray personnel and beneficiaries.

**Table 3: Location and Names of Operations Sites**

| Departments/ Regions | Districts | Operations Sites | Type of Facility (Health Center, Private Building) |
|---|---|---|---|
| South-West | Kampti | Kampti | Facility provided free of charge by the Center for Health and Social Prevention / Centre de Santé et Prévention Sociale (CSPS) |
| | | Passena (Kpapira) | Private building provided free of charge from the community |
| | | Helintira | Private building provided free of charge from the community |
| | | Djigoue (Irinao) | Facility provided free of charge by the health center (CSPS) |
| | | Pergban | Facility provided free of charge by the health center (CSPS) |
| | | Galgouli (latara) | Private building provided free of charge by the community |

| Departments/ Regions | Districts | Operations Sites | Type of Facility (Health Center, Private Building) |
|---|---|---|---|
| Boucle du Mouhoun | Solenzo | Balave | Facility provided free of charge by the health center (CSPS) |
| | | Kouka 1 | Facility provided free of charge by the health center (CSPS) |
| | | Kouka 2 | Facility provided free of charge by the health center (CSPS) |
| | | Kouka 3 | Facility provided free of charge by the health center (CSPS) |
| | | Sogodjankoli | Facility provided free of charge by the health center (CSPS) |
| | | Sanaba ( Founa) 1 | Facility provided free of charge by the health center (CSPS) |
| | | Sanaba ( Founa) 2 | Facility provided free of charge by the health center (CSPS) |
| | | Baye 1 | Facility provided free of charge by the health center (CSPS) |
| | | Baye 2 | Facility provided free of charge by the health center (CSPS) |
| | | Bena (Siguinonghin) 1 | Facility provided free of charge by the health center (CSPS) |
| | | Bena (Siguinonghin) 2 | Facility provided free of charge by the health center (CSPS) |
| | | Solenzo (Moussakongo) 1 | Private building provided free of charge by the community |
| | | Solenzo (Moussakongo) 2 | Private building provided free of charge by the (community |
| | | Tansila | Facility provided free of charge by the health center (CSPS) |

Each morning during the spray campaign, breakfast was served to SOPs, team leaders (TLs), spray pump technicians and spray supervisors before they were deployed to the field to conduct spray operations. Right after the teams were served breakfast, a morning mobilization meeting took place, where the spray teams were brought together, while respecting the necessary social distance amid the 2020 coronavirus disease (COVID-19) pandemic, for important information-sharing (i.e. performance related aspects, recommendations, etc.). Handwashing facilities were also installed at all operations sites for spray workers to practice regular handwashing to limit the risk of disease transmission and insecticide contamination.

The project rented motorcycle tricycles to transport the spray teams to and from the operational sites to the spray sites. The project also used vehicles for supervision related purposes and to transport spray equipment

and insecticide. To comply with the social distancing requirement, a six-seater tricycle carried four SOPs per trip.

At the end of each day, the SOPs handed their smartphones used for mobile data collection to their team leaders who verified the completed forms (for completeness and accuracy) and compiled the daily data before submitting them to their site coordinators. After data verification, team leaders proceeded with the synchronization process to the VectorLink Collect database server. Smartphones were also cleaned at the end of each day to minimize the risk of disease transmission during the COVID-19 pandemic. Table 4 below shows the number of spray teams recruited during the 2020 IRS campaign.

**Table 4: Number of Spray Teams Recruited during the 2020 IRS Campaign**

| Regions | Districts | Operational Sites | Number of SOPs | Number of Team Leaders | Number of Site Supervisors | Numbers of Mobilizers | Total |
|---|---|---|---|---|---|---|---|
| South-West | Kampti | Kampti | 33 | 7 | 1 | 53 | 94 |
| | | Passena (Kpapira) | 16 | 3 | 1 | 33 | 53 |
| | | Helintira | 16 | 3 | 1 | 7 | 27 |
| | | Djigoue (Irinao) | 22 | 4 | 1 | 43 | 70 |
| | | Pergban | 11 | 2 | 1 | 21 | 35 |
| | | Galgouli (Latara) | 16 | 3 | 1 | 33 | 53 |
| Boucle du Mouhoun | Solenzo | Balave | 34 | 7 | 1 | 26 | 68 |
| | | Kouka | 83 | 17 | 3 | 56 | 159 |
| | | Sogodjankoli | 19 | 4 | 1 | 22 | 46 |
| | | Sanaba (Founa) | 64 | 13 | 2 | 49 | 128 |
| | | Baye | 53 | 11 | 2 | 32 | 98 |
| | | Bena (Siguinonghin) 1 | 64 | 13 | 2 | 34 | 113 |
| | | Solenzo (Moussakongo) 1 | 61 | 12 | 2 | 36 | 111 |
| | | Tansila | 29 | 6 | 1 | 28 | 64 |
| **Total** | | | **521** | **105** | **20** | **473** | **1,119** |

## 4.2. TRAINING

The VectorLink Burkina Faso project, in collaboration with the MOH /NMCP, updated the standard training curriculum, training job aids and participants' handbooks to account for COVID-19 prevention practices. The project shared final training materials among staff and national facilitators, who later facilitated their respective training sessions. The key topics covered during the trainings included the following: IRS concepts and planning, environmental compliance and personal safety, monitoring and evaluation of IRS, gender awareness, social behavior change concepts, communication and information transfer techniques, management of operational sites, insecticide and equipment handling, spray techniques and proper use of personal protective equipment (PPE), logistics, and warehouse management. An emphasis was placed on team leaders, supervisors and SOP training with the use of GPS-equipped smartphones for IRS data collection. Training sessions were conducted by VectorLink Burkina Faso staff and government counterparts, including staff from NMCP, DRS and DHMT.

A one-day IRS core training was conducted on April 24, 2020 by the project staff, NMCP, Institute of Research on Health Sciences / Institut de Recherches en Sciences de la Santé (IRSS) and the National Malaria Research and Training Center / Centre National de Recherche et de Formation sur le Paludisme (CNRFP) and attended by trainers from DRS and DHMT. A total of 25 people of whom 19 (76 percent) were men

and six were women (24 percent) attended the trainings. Table 5 below provides details of the types of trainings covered.

**Table 5: Number of Training Sessions and People Trained, Disaggregated by Job Title, Spray Zone and Gender.**

| Training | Kampti | | Solenzo | | Total | | |
|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Total |
| Mobilizers | 170 | 20 | 256 | 27 | 426 | 47 | 473 |
| Team Leaders | 21 | 2 | 66 | 16 | 87 | 18 | 105 |
| District Coordinators/Site Supervisors | 7 | 0 | 15 | 0 | 22 | 0 | 22 |
| Supervisors (Head of Health Centers) | 4 | 2 | 5 | 1 | 9 | 3 | 12 |
| Clinicians (Doctors) | 11 | 1 | 35 | 4 | 46 | 5 | 51 |
| Supervisors Community (health Post Nurses/Infirmiers Chef de Poste) | 6 | 2 | 14 | 0 | 20 | 2 | 22 |
| Spray Operators | 120 | 17 | 398 | 92 | 518 | 109 | 627 |
| Spray Pump Technicians | 7 | 0 | 14 | 0 | 21 | 0 | 21 |
| Washers | 0 | 17 | 0 | 56 | 0 | 73 | 73 |
| Storekeepers | 6 | 2 | 12 | 3 | 18 | 5 | 23 |
| Drivers | 3 | 0 | 3 | 0 | 6 | 0 | 6 |
| Guards | 18 | 0 | 24 | 0 | 42 | 0 | 42 |
| Logistics Assistants (2), Finance assistants (2), Monitoring and Evaluation assistants (2) | 3 | 0 | 3 | 0 | 6 | 0 | 6 |
| Others (Master Trainers and ToT Trainers) | 3 | 2 | 4 | 1 | 7 | 3 | 10 |
| Total | 379 | 65 | 849 | 200 | 1228 | 265 | 1493 |
| Percentage of women | 14.64% | | 19.07% | | 17.75% | | |

**Figure 2: Trainings**



The VectorLink Burkina Faso project organized a one-day capacity building orientation on entomological monitoring for selected participants from the national, regional and district government level. The orientation was facilitated by IRSS and CNRFP.

## 4.3. Spray Operations & Supervision

**Number of Eligible Structures Found and Spray Coverage**

During the 2020 IRS campaign, the project found a total of 171,276 structures (32,347 in Kampti and 138,929 in Solenzo). The project sprayed 162,037 structures (26,642 in the Kampti and 135,395 in Solenzo) out of 171,276 structures found. The overall coverage rate achieved for both districts was 94.60 percent.

### 4.3.1. Cadre of People Hired to Support the 2020 IRS Campaign

The PMI VectorLink Burkina Faso project hired 1,286 seasonal workers (387 seasonal workers in Kampti including 331 men and 56 women; 899 seasonal workers in Solenzo, including 721 men and 178 women). All recruitments were made in collaboration with the MoH / NMCP and local health authorities (DHMT and Health Post Nurse / Infirmier Chef de Poste (ICP)). Table 6 provides details on the seasonal workers recruited.

**Table 6: Seasonal Workers Hired for the Spray Districts**

| Seasonal Staff Category | Kampti | | Solenzo | | Total | | |
|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Total |
| Team Leaders | 21 | 2 | 66 | 16 | 87 | 18 | 105 |
| Spray Operators | 99 | 15 | 331 | 76 | 430 | 91 | 521 |
| Spray Pump Technicians | 7 | 0 | 14 | 0 | 21 | 0 | 21 |
| Washers | 0 | 17 | 0 | 56 | 0 | 73 | 73 |
| Mobilizers | 170 | 20 | 256 | 27 | 426 | 47 | 473 |
| District Coordinators | 1 | 0 | 1 | 0 | 2 | 0 | 2 |
| Site Supervisors | 6 | 0 | 14 | 0 | 20 | 0 | 20 |
| Storekeepers | 6 | 2 | 12 | 3 | 18 | 5 | 23 |
| Guards | 18 | 0 | 24 | 0 | 42 | 0 | 42 |
| Assistants: Finance Assistants, Logistics Assistants, Monitoring & Evaluation Assistants | 3 | 0 | 3 | 0 | 6 | 0 | 6 |
| Total | 331 | 56 | 721 | 178 | 1052 | 234 | 1,286 |
| Percentage of Women | 14.47% | | 19.80% | | 19.20% | | |

### 4.3.2. Key Operational Details

**Mobile Payment**

Seasonal workers hired for the 2020 spray campaign were paid through the mobile payment system (Orange Money). The mobile payment system has proven to be very effective as it allowed the project to make payments remotely in a timely, cost efficient and secure manner. In terms of cost efficiency, the project paid a small transfer fee per transaction and did not have to incur the additional expenses (perdiems, fuel, car rental costs, security forces presence, etc.) associated with in-person payments by the project staff.

## 4.4. Insecticide

The project had 6,330 sachets of SumiShield (set to expire in June 2021) and 784 sachets of Fludora® Fusion (set to expire in February 2021) left over from the 2019 spray campaign. The project procured for the 2020 IRS campaign a total of 25,320 sachets of SumiShield and 5,330 sachets of Fludora® Fusion to spray the targeted districts. The project used 6,099 sachets of Fludora® Fusion in Kampti and 31,029 sachets of

Sumishield in Solenzo. One sachet of SumiShield sprayed approximately 4.4 structures in Solenzo, while a sachet of Fludora® Fusion sprayed approximately 4.4 structures in Kampti. At the end of the spray campaign, the project had 15 sachets of Fludora® Fusion left set to expire in February 2022 and 621 sachets of SumiShield set to expire in December 2022.

**Table 7: Number of Structures Sprayed and Quantity of Insecticide Used per District, Burkina Faso IRS Campaign, 2020**

| Region | District | No. of Structures Sprayed | No. of Sachets of Insecticide Used | Average Number of Structures Sprayed per Sachet of Insecticide | Insecticide Type |
|---|---|---|---|---|---|
| | | | Sachets | | |
| **South-West** | Kampti | 26,642 | 6,099 | 4.4 | Fludora® Fusion |
| **Boucle du Mouhoun** | Solenzo | 135,395 | 31,029 | 4.4 | SumiShield |
| **Total** | | **162,037** | **37,128** | **4.4** | |

## 4.5. IEC / SBC Activities & Outcomes

PMI VectorLink Burkina Faso, in collaboration with the Burkina Faso NMCP and other stakeholders, supported a range of Information, Education, Social and Behavior Change Communication (IEC/SBCC) activities to ensure full support to IRS activities and to promote acceptance of this intervention by the community. The project updated existing IEC materials and developed others to suit the 2020 IRS campaign needs. IEC materials and tools that the project updated / developed included: training manual and PowerPoint presentations, IRS posters and banners for awareness against theft of IRS commodities and data falsification by SOPs, as well as partner radio contracts. The project conducted a one-day workshop to amend and validate the communication plan and strategy to be used throughout the campaign. The project used public town criers and worked with the non-governmental organization (NGO), Progettomondo (a Global Fund grant sub-recipient), to leverage communication activities.

IEC/SBCC activities focused on positive benefits of IRS in preventing and controlling malaria, on addressing common prevalent myths, and misconceptions about IRS that could impede IRS acceptance and project's performance. In order to safely implement the IRS campaign amid the COVID-19 pandemic, seasonal workers were required to comply with prevention measures (safe distance, handwashing, and PPE at all times) put in place at the operational site and community level.

The project team worked with media channels to broadcast radio spots and inform communities of the IRS campaign schedule and its benefits for malaria prevention and control. In addition, messages on IRS from the High Commissioner of both provinces were broadcasted on a daily basis during the entire course of the campaign. Interactive radio-talks were also organized with community members with questions and answers on IRS.

**Figure 3: Mobilization by Progettomondo Team**

Table 8 below shows the number of people reached prior to the arrival of SOPs.

**Table 8: Summary of People Reached through Mobilization**

| District | Mobilizers/Town Criers | Radio Broadcasts | Religious Places | Other (television, health centers, etc.) | Grand Total |
|---|---|---|---|---|---|
| Kampti | 25,605 | 50 | 295 | 167 | 26,117 |
| Solenzo | 113,118 | 4,980 | 3,333 | 981 | 122,412 |
| Total | **138,723** | **5,030** | **3,628** | **1,148** | **148,529** |

### Advocacy Meetings

In collaboration with NMCP and partners, VectorLink Burkina Faso conducted advocacy meetings in each district on April 28, 2020. These meetings involved administrative, political and health authorities, as well as community leaders. During these advocacy meetings, the project also presented to administrative and health authorities, the contingency plan that was put in place to safely implement IRS activities in the context of COVID-19.

### Community Mobilization

Progettomondo provided communication support to the project free of charge and worked directly at the community level to address factors preventing or supporting IRS acceptability, and promote malaria-related behaviors. The VectorLink Burkina Faso team provided training to the Progettomondo's community-based coordinators (seven) and monitoring and evaluation managers (seven), as well as animators (36) at the district level on specific IRS components to be included in their mobilization messages. The project held two training sessions prior to launching IEC activities:

- Training of Progettomondo coordinators and monitoring and evaluation managers held on April 30, 2020
- Training of town criers/mobilizers (473) held on May 26, 2020

All mobilizers participated in a one-day training on May 26, 2020, which focused on key messaging and effective communication techniques focused on both malaria and COVID19.

### Town Criers

As in previous years, the project used town criers. When the spray was not conducted in a village in one day for any reason, including weather, rituals or funerals, the scattering of households in the village, etc., the town crier, in collaboration with the village leader and supervisor, informed household owners of date changes.

### Mass Media Communication

Two provincial radio stations were contracted to cover the IRS campaign. Activities included the broadcast of messages in French and in local languages covering the following:

- Dissemination of IRS operations schedules in each location
- Talk shows, roundtables and interactive radio games (with questions and answers)
- Dissemination of High Commissioners' messages, etc.

**Table 9: IEC Activities Conducted by Radio Stations**

| Activities | Number of Broadcasts |
|---|---|
| Disseminating short radio spots and messages (French and two main national languages: More and Dioula) | 110 |
| IRS schedule announcements/invitations for local leaders to attend IRS planning meetings (French and national languages) | 8 |
| Debates and (interactive) discussion shows | 3 |
| Animated radio shows with questions and answers games on IRS | 4 |
| Interviews and testimonials of beneficiaries | 2 |
| Interviews on IRS conducted in communities | 3 |

### IEC / SBC outcomes

With IEC / SBC strategies deployed during the 2020 IRS campaign, the project experienced an improvement in IRS acceptance at the household level with 3,741 non-sprayed structures in 2020 compared to 9,239 non-sprayed structures in 2019 associated with refusals. The average rate of refusals represented 40.49 percent of all non-sprayed structures. Table 10 shows the proportion of refusal cases.

**Table 10: Proportion of Refusal Cases among Untreated Structures**

| Districts | Structures Found # | Non-sprayed Structures # | Structures Not Sprayed due to Refusals | |
|---|---|---|---|---|
| | | | # | % |
| Kampti | 32,347 | 5,705 | 2,705 | 47.41% |
| Solenzo | 138,929 | 3,534 | 1,036 | 29.32% |

In the context of Covid-19, the project, in collaboration with NMCP, organized a short launching ceremony in each of the two districts. The ceremonies were chaired by the highest authorities of the province.

**Figure 4: Mini-Spray Campaign Launch Ceremony**

### National Capacity Building and Collaboration Efforts

During the 2020 IRS campaign, VectorLink Burkina Faso continued to promote the transfer of technical capacity to the national government to enable them to assume greater responsibility in planning, implementing and monitoring IRS activities. The project worked in coordination with NMCP/MOH staff at the national, regional and district level to implement program activities, including environmental compliance, community mobilization, training, logistics management, supervision and coordination of IRS field operations.

As part of a hands-on approach to capacity building, NMCP, DRS, DHMT and provincial environmental officers were fully involved in the supervision of IRS in the two districts. In addition, high level MOH staff, including the NMCP coordinator and CNRFP representative, accompanied by the VectorLink project's Chief of Party (COP), visited the district of Kampti where the progress rate was low because of ritual ceremonies. Their direct involvement helped address several refusal cases.

At the regional and district level, capacity building included the following areas:

- Micro-planning for IRS activities
- Training of personnel to conduct IRS activities
- Recruitment of spray personnel
- Supervision of spray activities using smartphones
- Community mobilization for IRS operations and community meetings and dialogues

## 4.6. Gender Mainstreaming

In the context of the IRS campaign, PMI VectorLink Burkina Faso's strategies for gender mainstreaming included:

- A high-level advocacy meeting with political and administrative authorities, as well as opinion leaders to discuss the different barriers observed in the intervention areas, including those that prevented women from fully participating in all components of the IRS implementation. The objective of this meeting was to sensitize these stakeholders on the importance of increasing female participation in IRS campaigns.
- VectorLink Burkina Faso has incorporated gender awareness and sexual harassment training in all the trainings conducted prior to the campaign. Participants learned about the importance of gender equity and equality for the success of the spray campaign, and for women's empowerment in society.
- Ensuring women have accommodations in operational sites where they feel safe and comfortable, including separate restrooms for male and female workers, properly labeled and well separated for privacy.
- Ensuring that every woman received the appropriate size for coveralls and boots.
- Creating a buddy system so that at least two women are together on each spray team.
- Continuing to promote a respectful working environment through the project's sexual harassment policy for all employees, including seasonal workers.
- Providing disposable and reusable sanitary pads for use while in the field.
- Displaying posters on gender awareness guidelines in all operational sites, as well as anti-harassment posters and encourage women to report any sexual harassment.
- Ensuring that recruitment, mobilization, and training include women and respect women's time constraints when feasible.
- Explicit inclusion of gender issues in all training modules.
- Ensuring that women who are pregnant or breastfeeding and recruited during the campaign are assigned to roles without exposure to insecticide.
- Providing sex-disaggregated data for all indicators, as appropriate.

During the 2020 IRS campaign, women represented 18.58 percent of the seasonal staff for the 20 operational sites versus 21.04 percent in 2019 for 22 operational sites.

**Table 11: Female Participation during the 2020 IRS Campaign.**

| Category | Female | Male | Total | % Female |
|---|---|---|---|---|
| Mobilizers | 47 | 426 | 473 | 9.94% |
| Team Leaders | 18 | 87 | 105 | 17.14% |
| District Coordinators | 2 | 0 | 2 | 100.00% |
| Supervisors (ICP) | 6 | 21 | 27 | 22.22% |
| Spray Operators | 93 | 428 | 521 | 17.85% |
| Site Coordinators | 0 | 20 | 20 | 0.00% |
| Spray Pump Technicians | 0 | 21 | 21 | 0.00% |
| Washers | 73 | 0 | 73 | 100.00% |
| Storekeepers | 5 | 18 | 23 | 21.74% |
| Guards | 0 | 42 | 42 | 0.00% |
| Finance Assistants | 0 | 2 | 2 | 0.00% |
| Logistics Assistants | 0 | 2 | 2 | 0.00% |
| Monitoring and Evaluation (M&E) | 0 | 2 | 2 | 0.00% |
| **Total** | 244 | 1,069 | 1,313 | 18.58% |

# 5. ENTOMOLOGY

Entomological surveillance is a key component of IRS programming, providing information on the impact of IRS on vector density and behavior in IRS areas. Entomological activities also help assess the quality of IRS operations, the decay rates of insecticide applied, and the vector susceptibility to insecticides used for malaria vector control.

## 5.1 MOSQUITO SUSCEPTIBILITY

In 2019, the project collected larvae in Solenzo and Kampti (both IRS sites) and in 13 non-IRS sites. *An. gambiae* s.l. larvae were reared at the IRSS facility in Bobo-Dioulasso and WHO susceptibility tests for pirimiphos-methyl (0.25 percent) and clothianidin (2 percent) were conducted on emergent adults aged two to-five days. In the IRS sites (Kampti and Solenzo), mortality of *An. gambiae* s.l. was 100 percent to pirimiphos-methyl (24 hours after exposure). The mortality rate for clothianidin (2 percent) was 98 percent in Solenzo and 100 percent in Kampti (120 hours after exposure). As pirimiphos-methyl had been sprayed for several years, Fludora Fusion WG-SB and SumiShield 50 WG (both with clothianidin active ingredient) were selected for IRS in Kampti and Solenzo respectively.

## 5.2 IRS QUALITY ASSESSMENT

The project conducted cone bioassays in two randomly selected villages in each district (Kampti and Solenzo). Each village was separated by at least 20km. A total of five houses were randomly selected for bioassay in each village, for a total of ten houses per district. Different wall substrates were tested, with more mud houses tested compared to cement, based on the type of wall substrates most commonly observed in the districts and based on demographic surveys carried out.

Laboratory reared unfed female *An. gambiae* Kisumu (susceptible reference strain) and *An. coluzzii* VKPER (pyrethroid resistant strain) aged three to five days were tested using standard VectorLink protocols for cone bioassay. A negative control cone bioassay was done for every house by exposing mosquitoes to an unsprayed surface of a similar untreated wall material.

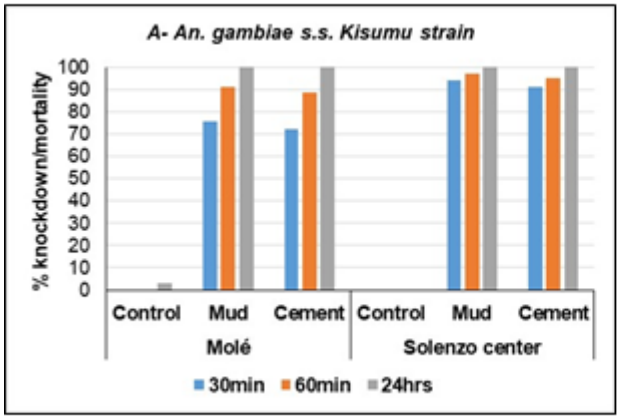
**Table 12: Number of *An. gambiae* Kisumu (A) and *An. coluzzii* VKPER (B) Exposed and Percentage Mortality 24 hours After Exposure to SumiShield 50 WG in Solenzo District.**

| District | Villages & insecticides | Wall type | Sprayed | | | | | Control | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Cone height (m) | | | Total | % Mortality (24h) | Total | % Mortality (24h) |
| | | | 0.5m | 1m | 2m | | | | |
| ***A- An. gambiae* s.s. Kisumu** | | | | | | | | | |
| Solenzo | Molé (SumiShield WG) | Mud | 22 | 24 | 27 | 73 | 100 | 24 | 0 |
| | | Cement | 22 | 17 | 16 | 55 | 100 | 31 | 3.2 |
| | Town Center (SumiShield WG) | Mud | 43 | 37 | 35 | 115 | 100 | 27 | 0 |
| | | Cement | 30 | 25 | 23 | 78 | 100 | 27 | 0 |
| Total | | | 117 | 103 | 101 | 321 | 100 | 109 | 0.92 |

| District | Villages & insecticides | Wall type | Sprayed | | | | | Control | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Cone height (m) | | | Total | % Mortality (24h) | Total | % Mortality (24h) |
| | | | 0.5m | 1m | 2m | | | | |
| ***B- An. coluzzii* VKPER** | | | | | | | | | |
| Solenzo | Molé (SumiShield WG) | Mud | 34 | 34 | 33 | 101 | 100 | 30 | 0 |
| | | Cement | 19 | 17 | 18 | 54 | 100 | 32 | 0 |
| | Town Center (SumiShield WG) | Mud | 28 | 29 | 32 | 89 | 100 | 27 | 0 |
| | | Cement | 23 | 22 | 27 | 72 | 100 | 31 | 0 |
| Total | | | 104 | 102 | 110 | 316 | 100 | 120 | 0 |

*Spraying was conducted on June 1, 2020 and cone bioassay was done on June 02, 2020.*

**Figure 5: Knock-down (30 and 60 minutes) and 24-hour Mortality of Susceptible *An. gambiae* s.s. Kisumu (A) and *An. coluzzii* VKPER (B) Exposed to SumiShield 50 WG Sprayed Mud and Cement Walls in Molé (rural area) and Solenzo Center (Urban Area).**



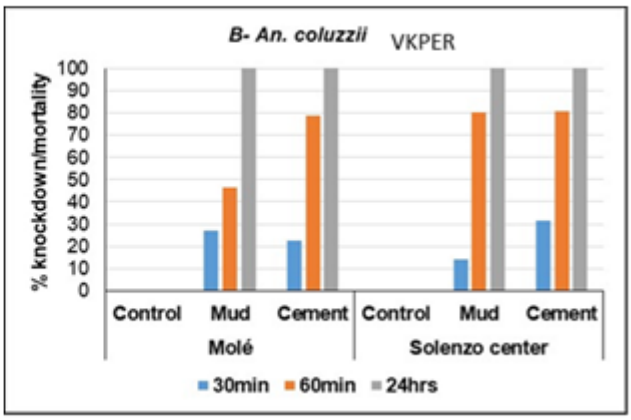



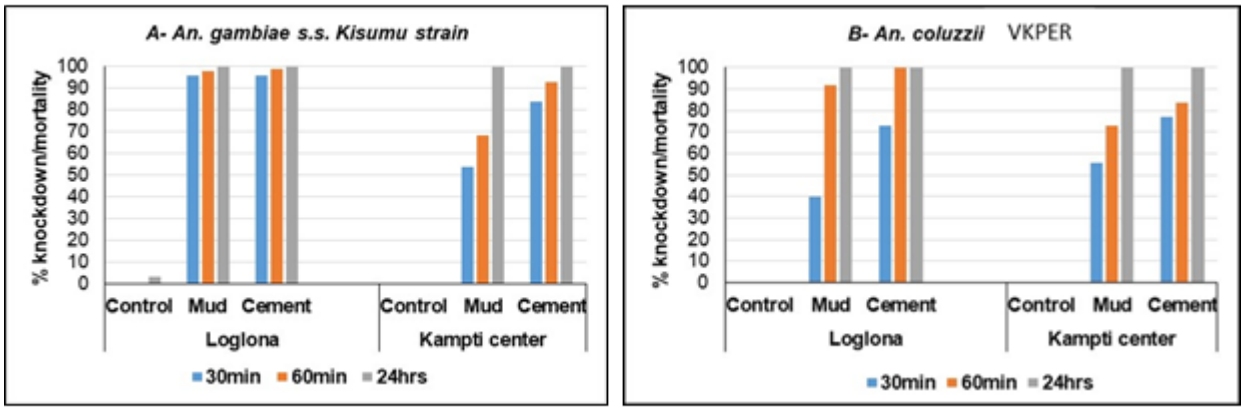

**Table 13: Number of *An. gambiae* Kisumu (A) and *An. coluzzii* VKPER (B) Exposed and Percentage Mortality 24 Hours after Exposure to Fludora Fusion WP-SB in Kampti District.**

| District | Villages & insecticides | Wall type | Sprayed | | | | | Control | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Cone height (m) | | | Total | % Mortality (24h) | Total | % Mortality (24h) |
| | | | 0.5m | 1m | 2m | | | | |
| ***A- An. gambiae* s.s. Kisumu** | | | | | | | | | |
| Kampti | Loglona (Fludora Fusion WP-SB) | Mud | 32 | 34 | 28 | 94 | 100 | 24 | 0 |
| | | Cement | 24 | 18 | 23 | 65 | 100 | 28 | 3.6 |
| | Town Center (Fludora Fusion WP-SB) | Mud | 29 | 27 | 28 | 84 | 100 | 28 | 0 |
| | | Cement | 17 | 18 | 22 | 57 | 100 | 30 | 0 |
| Total | | | 102 | 97 | 101 | 300 | 100 | 110 | 0.91 |

| District | Villages & insecticides | Wall type | Sprayed | | | | | Control | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Cone height (m) | | | Total | % Mortality (24h) | Total | % Mortality (24h) |
| | | | 0.5m | 1m | 2m | | | | |
| ***B- An. coluzzii* VKPER** | | | | | | | | | |
| Kampti | Loglona (Fludora Fusion WP-SB) | Mud | 30 | 23 | 27 | 80 | 100 | 27 | 0 |
| | | Cement | 19 | 18 | 17 | 54 | 100 | 23 | 0 |
| | Town Center (Fludora Fusion WP-SB) | Mud | 23 | 25 | 30 | 78 | 100 | 29 | 0 |
| | | Cement | 22 | 19 | 17 | 58 | 100 | 24 | 0 |
| Total | | | 94 | 85 | 91 | 270 | 100 | 103 | 0 |

*Spraying was conducted on June 2, 2020 and cone bioassay was done on June 4, 2020.*

**Figure 6: Knock-down (30 and 60 minutes) and 24-hour Mortality of Susceptible *An. gambiae* s.s. Kisumu (A) and *An. coluzzii* VK (B) Exposed to Fludora Fusion WP-SB Sprayed Mud and Cement Walls in Loglona (Rural Area) and Kampti Center (Urban Area).**




Cone bioassay, with both susceptible An. gambiae Kisumu and pyrethroids resistant An. coluzzii VKPR, resulted in 100 percent mortality within 24 hours of exposure on cement and mud walls sprayed with SumiShield 50 WG or Fludora Fusion WP-SB. These results indicate that spray application was conducted to acceptable quality standards in the houses tested in Kampti and Solenzo districts. Monthly monitoring of residual efficacy will be performed using susceptible An. gambiae Kisumu and wild collected An. gambiae from each locality until mortality is <80 percent for two consecutive months.

# 6. ENVIRONMENTAL COMPLIANCE

## 6.1 IRS CAMPAIGN ASSESSMENTS

**Environmental Compliance**

The PMI VectorLink Burkina Faso project operated under a supplemental environmental assessment (SEA) approved by USAID in 2018, which authorizes the use of pyrethroids, organophosphates, carbamates, neonicotinoids, clothianidin/deltamethrin combination and pyrrole (chlorfenapyr) (when listed by WHO PQ). During the 2020 IRS campaign, the project used SumiShield WG 50 (Clothianidin) to spray the district of Solenzo, and Fludora® Fusion for the district of Kampti.

**Challenges and Considerations**

In 2020, the project intervened in two districts in South-West (Kampti district) and Boucle de Mouhoun (Solenzo district). New operational sites have been created in Solenzo district (Solenzo, Kouka, Sanaba, Bena and Baye) because of the increased number of SOPs based on a shorter spray period (changed from 30 days to 20 days) as well as the decongestion of the sites to limit the number of spray teams per operational site. PMI VectorLink Burkina Faso conducted an environmental geographical reconnaissance in those areas to identify new appropriate sites for storerooms, the safest method of SOPs transport and insecticide, and environmental measures required to protect communities during the spray campaign.

**Pre-Season Environmental Compliance Assessments**

Prior to the 2020 campaign, the PMI VectorLink Burkina Faso team conducted initial Pre-Season Environmental Compliance Assessments (initial PSECA) that provided the basis for the detailed estimate of all sites' rehabilitation work, accessibility of structures to be sprayed for the final deployment of transport, and other operational aspects to ensure a successful campaign.

Approximately two weeks before the commencement of spray activities, the project performed another inspection (final PSECA) to verify that all necessary work was completed, and that the facilities were ready to receive insecticide shipments prior to starting spray operations. Based on the outcome of the inspections, all necessary repairs were made to soak pits prior to the launch of the spray campaign. PMI VectorLink Burkina Faso also made available all documents, data sheets, guide to first aid, recommendations in case of spillage and warning signs. In addition, before the campaign, all seasonal staff underwent medical checkups, as well as pregnancy tests for women.

Although the VectorLink project's Environmental Compliance Officer (ECO) is principally responsible for environmental compliance of the VectorLink project, the representative of NMCP for environmental compliance and the provincial environmental Compliance Officer in both districts participated in environmental inspections. This team used smartphones with PMI standard environmental compliance checklists.

During this exercise, the project continued to strengthen the capacity of IRS counterparts in environmental compliance for IRS activities, and ensure that they are cognizant with PMI's Best Management Practices guidelines.

**Environmental Compliance Activities during the Campaign**

PMI VectorLink Burkina Faso's staff supervised spray operations and ensured that environmental compliance standards as specified in the Best Management Practices (BMPs) are met, including the proper use of PPE, progressive rinsing of spray pumps, condition of vehicles/tricycles used to transport spray teams and insecticides, storage conditions of IRS materials, as well as the display of warning signs at warehouses. The staff also closely monitored the proper management and storage of IRS waste, accuracy of the stock cards at

the warehouse level and use of proper spray techniques by SOPs. In addition, the supervision team ensured that beneficiaries had received clear information about the IRS campaign and knew how to prepare their structures for spraying. PMI VectorLink Burkina Faso monitored the condition of fixed soak pits on a regular basis to ensure proper flow and drainage. The ECO also trained district coordinators on inspecting vehicles and tricycles for their conformity to transport SOPs and material to the field.

**Post-Spray Environmental Compliance Activities**

At the end of the 2020 spray campaign, VectorLink Burkina Faso cleaned all IRS materials. The project then transported materials from IRS sites to the district warehouses (Kampti and Solenzo). However, all remaining insecticides, including 15 sachets of Fludora Fusion and 621 sachets of SumiShield, were transferred to the central warehouse in Diebougou. The VectorLink team conducted post-spray site decontamination and decommissioning of operations sites. After the VectorLink Burkina Faso project restored the sites to a well-maintained state and made them safe for the surrounding communities, the VectorLink team formally handed the sites back to the health centers and community representatives that provided the facilities for safekeeping until the next IRS campaign.

From July 6 to July 11 2020, VectorLink Burkina Faso along with representatives from provincial environmental compliance officers, performed a post-spray inspection of the central warehouse, district warehouses and all operations sites in Kampti and Solenzo, and ensured that soak pits were properly closed and secured. The inspection team reported on the compliance of the 2020 IRS campaign with IRS standardized best practices for warehousing, human safety and environmental protection.

## 6.2 Incident Reports

Two incidents (Table 14) took place during the implementation of the 2020 IRS campaign and were reported within the 48-hour incident-reporting deadline. The incidents include the loss of a full insecticide sachet and the loss of an empty sachet of Sumishield. However, after a dedicated community involvement, the full sachet of insecticide was found.

**Table 14: Summary of Incidents Recorded during the 2020 IRS Campaign**

| | Incidents | Location | Date |
|---|---|---|---|
| 1. | Incident related to the loss of a full sachet of insecticide | Village of Bena, Solenzo district | June 1, 2020 |
| 2. | Incident related to the loss of an empty sachet of insecticide | Village of Solenzo 1, Solenzo district | June 1, 2020 |

## 6.3 Waste Management

Under the supervision of the Project Environmental Compliance Officer, all solid wastes generated from the 2020 spray campaign were collected and segregated. The team collected all empty insecticide sachets, and reconciled the numbers using ledger books and stock cards.

VectorLink signed an agreement with SAPHYTO for the incineration of empty SumiShield and Fludora Fusion sachets and other items as needed. The plastic bags from the drinking water are given to a recycling company, Association Salubrité de Solenzo / Salubrity Association of Solenzo. Masks, chalk and pump cartons are given to the same structure for composting. Table 15 illustrates the types of solid waste, disposal methods and sites.

**Table 15: Waste Generated during the 2020 Spray Campaign and Planned Management Methods**

| Designation | Type | Disposal Method | Estimation Date of Transfer to Disposal Site |
|---|---|---|---|
| Plastic materials | Plastic | Recycling/shredding and burial | July/August 2020 |
| SumiShield and Fludora Fusion empty sachets | Aluminum sachet | Incineration | July/August 2020 |
| Batteries for flashlights | Alkaline | Landfilling | July 2020 |
| Used Masks | Synthetic polymer fibers | Incineration | July 2020 |
| Chemical-resistant gloves | Polyvinyl Chloride (PVC) | Landfilling / Donation | July 2020 |
| Others (garbage bag, absorbent paper, empty boxes, etc.) | Paper based, biodegradable materials, latex | Incineration, Repurposing | July 2020 |

# 7. MONITORING AND EVALUATION

## 7.1 DATA COLLECTION/ENTRY/QUALITY ASSURANCE

Building on the success of the mobile data pilot that took place in 2019, VectorLink Burkina Faso continued the use of mobile data collection for the 2020 IRS campaign. It was implemented at the primary point of collection through spray operators (SOPs). The electronic data collection forms were revised and improved to ensure the collection of all PMI-requested indicators. The improvement involved the creation of the automatic generation of the IRS numbers in the form, to help SOPs with the proper marking of the structure and to reduce the possibility of duplicate IRS numbers. Before the beginning of the 2020 spray campaign, the project trained those involved in data collection on the data collection process and in completing all appropriate forms. Spray data was collected on tablets. Paper forms were used only as necessary in the field.

At the end of the day, the team leader verified the data collected by the SOPs to ensure that the forms were properly filled out before being synchronized to the server. The summary table generated by smartphone was used by the team leader to fill the team leaders' form.

**Figure 7: Use of Data Collection Tablets by the Spray Teams**

**VectorLink Collect Database**

To improve spray data entry, cleaning, and reporting, VectorLink Burkina Faso continued the collection of data through the use of electronic tablets by SOPs at the household level during the IRS 2020 campaign in the two target districts (Kampti and Solenzo).

Before the campaign started, the M&E and operations teams worked together to gather the necessary metadata that enable the deployment of the database. These were then configured in the system before the start of the campaign to facilitate data synchronization.

**Data Quality Assurance and Verification**

During the 2020 spray campaign, 145 villages were visited by supervisors in the two districts (31 in Kampti and 114 in Solenzo); 309 structures were visited out of 400 (77.25%) targeted structures. Table 16 below illustrates the DCV information.

**Table 16: DCV Data Summary Table**

| Districts | DCVUsing Smartphone | | |
|---|---|---|---|
| | Number of Villages Visited | Number of DCV Forms Filled Out | Number of Structures Verified |
| Kampti | 31 | 31 | 59 |
| Solenzo | 114 | 114 | 250 |
| **Total** | **145** | **145** | **309** |

## 7.2 mHEALTH

To support rapid decision making across the various program components, the project continued to use mobile health (m-Health) applications to complement the CommCare tools used throughout the project. The complementary mHealth tools have been designed in Open Data Kit (ODK). The mHealth reporting tools for data collection and verification, which VectorLink Burkina Faso used throughout the spray campaign, included the Performance Monitoring Tracker (PMT), the job aids, and the mobile supervisory forms, including the digitization of Data Collection Verification (DCV) form.

**Performance Monitoring Tracker (PMT)**

On a daily basis, site managers summarized key operations data on a performance-tracking sheet. Storekeepers submitted those key operations data, via PMT SMS, to CommCare HQ via Telerivet to generate key indicators on campaign progress and performance through automated email reports. The key indicators reported in this system included: the number of SOPs that worked for the day, number of structures found, number of structures sprayed and number of insecticide sachets used during the campaign.

**Job Aid Messages**

VectorLink Burkina Faso sent out daily SMS messages as alerts to coordinators, supervisors, team leaders, and storekeepers to remind them about topics such as compulsory breakfast, wearing personal protective equipment, gender awareness, the number of targeted structures on a daily basis, and any other instructions preventing the recurrence of any anomaly observed the previous days. Throughout the same channel, updates were made to spray teams based on the supervision observations. A total of 493 SMS messages (for an average of three reminders per day) were sent to 323 seasonal staff during the IRS campaign.

**Supervision tools**

A total of 145 DCV forms and 2,939 supervision forms were successfully completed by national supervisors and site coordinators through the CommCare application. Table 17 below provides a breakdown of the submitted forms.

**Table 17: Submitted Supervisory Forms during the Spray Campaign**

| Supervisory Form | ODK | CommCare |
|---|---|---|
| | Submitted | Submitted |
| Morning Mobilization | 25 | 493 |
| Transportation Vehicle/tricycles Inspection | 16 | 460 |
| Homeowner Preparation and Spray Operator Performance | 98 | 1,094 |
| End of Day Cleanup | 33 | 379 |
| Storekeeper Performance | 45 | 368 |
| Data Collection Verification (DCV) | - | 145 |

## 7.3 RESULTS

**Key Spray Results**

The M&E plan tracks performance and progress across the different components of the project based on the following key objectives: implementation of vector control interventions, entomological and epidemiological data to drive decision-making, support the delivery and storage of IRS and other vector control products, and innovation. The M&E plan (Annex A) indicator matrix shows how PMI VectorLink Burkina Faso has performed against these indicators.

To monitor performance during the campaign, the key indicators tracked throughout the campaign included structures targeted, structures found, and the proportion of structures sprayed out of those targeted (spray progress) and those found (spray coverage). During spraying, the project collected population details to establish the number of people protected. This included the total population disaggregated by gender and special groups, such as pregnant women and children under five. Table 18 provides a summary of key results.

**Table 18: Summary of 2020 Key IRS Results**

| Region | Districts | Structures Found by SOPs | Structures Sprayed | Structures not Sprayed | Spray coverage | Population Protected | Pregnant Women Protected | Children <5 years old Protected | Population not Protected | Pregnant Women not Protected | Children under 5 years old not Protected |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **South-West** | Kampti | 32,347 | 26,642 | 5,705 | 82.36% | 87,504 | 3,054 | 16,216 | 18,032 | 420 | 3,061 |
| **Boucle du Mouhoun** | Solenzo | 138,929 | 135,395 | 3,534 | 97.46% | 420,513 | 18,049 | 79,229 | 6,752 | 213 | 1,192 |
| **Total** | | **171,276** | **162,037** | **9,239** | **94.60%** | **508,017** | **21,103** | **95,445** | **24,784** | **633** | **4,253** |

### Insecticide Usage and SOP Performance

SOPs were given a daily target of 13 structures per day per spray operator at the start of the spray campaign. Spray operations started in remote areas, progressively moving inwards towards the more centrally located operations sites in the field. The project used a total of 6,099 sachets of Fludora® Fusion and 31,029 sachets of SumiShield 50 WG to spray 162,037 structures (Table 19).

**Table 19: 2020 IRS Results by District**

| Region | District | Structures Targeted | Structures Sprayed | Spray Coverage (%) | Number of Insecticide Sachets Used | Average Number of Structures per Sachet per District | Average Number of Structures Sprayed per District per Day |
|---|---|---|---|---|---|---|---|
| South-West | Kampti | 24,377 | 26,642 | 82.36% | 6,099 | 4.4 | 1,332 |
| Boucle du Mouhoun | Solenzo | 110,764 | 135,395 | 97.46% | 31,029 | 4.4 | 6,770 |
| **Total** | | 135,141 | 162,037 | 94.60% | 37,128 | 4.4 | 8,102 |

### Reasons for Non-Spray

During the 2020 IRS campaign, VectorLink Burkina Faso did not spray 5.39 percent (9,239 structures) of all found structures, compared to 8.43 percent in 2019. The key reasons for non-sprayed structures included: refusals (2.18 percent); locked structures (1.40 percent), missed spray appointments (0.50 percent), and temporary food stores (0.63 percent). Table 20 below gives the breakdown for the reasons for non-sprayed structures by district.

**Table 20: Reasons for Non-Spray by District**

| Reasons for Non-Spray | South-West | Boucle du Mouhoun | Total |
|---|---|---|---|
| | Kampti | Solenzo | |
| Locked | 1,623 | 770 | 2,393 |
| Other | 395 | 300 | 695 |
| Refused | 2,705 | 1,036 | 3,741 |
| Sick | 126 | 164 | 290 |
| Temporary Food Store | 81 | 992 | 1,073 |
| Funeral | 161 | 25 | 186 |
| Missed spray appointment (i.e. unavailability of responsible adult / household owner) | 614 | 247 | 861 |
| **Total** | **5,705** | **3,534** | **9,239** |

# 8. CHALLENGES, LESSONS LEARNED AND KEY RECOMMENDATIONS

## 8.1 CHALLENGES

The 2020 IRS campaign was carried out in particular context marked by many challenges, including:

- Securing the IRS campaign against the risks of the COVID-19 pandemic and its implications
    - Adjusting the number of seasonal workers in tricycles to comply with the social distancing (four persons instead of six) for travel on the field and for return to the operations sites required an increased number of tricycles.
    - Change of implementation strategies to comply with preventive measures against the spread of COVID-19, including the respect of physical/social distancing. For example, the trainings were subdivided into several sessions to accommodate the number of participants in relations to the workspace and the distance (two meters) between participants.
- Refusal cases were recorded particularly more in urban settings such as Kampti and Solenzo town centers and in areas where ritual ceremonies were celebrated.
- While the mobile data collection was successfully implemented, the team still experienced some delays in synchronizing data from few remote sites that lacked network coverage; therefore, the tablets from those remote sites had to be transported once a week to nearby sites with network coverage in order to synchronize all data.

## 8.2 LESSONS LEARNED / RECOMMENDATIONS

At the end of the campaign, the project team learned a number of lessons, including:

- The IRS campaign in a context of the COVID-19 pandemic is feasible through good planning and preparation, the establishment of alternative approaches, the interdisciplinary effort and support from partners (communities, stakeholders, opinions leaders, etc.).
- SBC / IEC is a very important strategy to obtain the desired behaviors, especially during the implementation of the IRS campaign in a context of health crisis and traditional rituals in some communities.
- The participation of government leaders and health managers in IRS operations enhances their interest and ownership of the project activities. It was acknowledged during several working sessions that activities were better coordinated between government counterparts and the project in 2020 compared to 2019. The team will continue improving communication and coordination between VectorLink and partners (NMCP) through better IRS activities planning (micro-planning, training and supervision).
- Continue to advocate for an increased participation of female workers.
- The project recommends building on the experience of this year's IRS campaign, which took place in a context of a global health crisis, in order to adopt all appropriate strategies to mitigate the risk of disease transmission for future campaigns.

# ANNEX A: MONITORING & EVALUATION (M&E) PLAN

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| Objective 1: Implementation of Malaria Vector Control (VC) Interventions | | | | | | | | | | | | | | |
| 1.1 | Successfully Execute IRS and Other Integrated Malaria VC Activities | | | | | | | | | | | | | |
| 1.1.1 | Number and percentage of completed annual country work plans developed and submitted on-time | X | Project records<br><br>Annually | Country | | | | | | | | | | |
| 1.1.2 | Number of eligible structures targeted for spraying | | Project records<br>Annually | Country | 245,192 | 266,765 | 266,765 | 221,255 | 220,482 | 135,141 | TBD | | TBD | |
| 1.1.3 | Number of eligible structures sprayed with IRS1 | | Project records<br>Annually | Country | 208,413 | 258,766 | 258,766 | 201,901 | 135,141 | 162,037 | TBD | | TBD | |
| 1.1.4 | Percentage of total structures targeted for spraying that were sprayed with a residual insecticide (Spray Coverage) | | Project records<br><br>Annually | Country | 85% | 97.0% | 85% | 91.3% | 85% | 94.60% | 85% | | 85% | |
| 1.1.5 | Number of people protected by IRS | | Project records<br><br>Annually | Country<br>Sex<br>Pregnant women<br>Children <5 | 867,715 | 766,374<br>Males: 363,340<br><br>Females: 403,034<br><br>Pregnant Women: 14,183<br><br>Child<5: 125,206 | 663,765 | 587,248<br>Males: 281,103<br><br>Females: 306,145<br><br>Pregnant Women: 11,959<br><br>Child<5: 92,809 | 770,000 | 508,017<br>Males: 244,386<br><br>Females: 263,631<br><br>Pregnant Women: 21,103<br><br>Child<5: 95,445 | TBD | | TBD | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 1.1.6 | Number and percentage of vector control project country programs submitting an EOSR within 45 days after the end of spray (including completing MEP and EMMR) | X | Project<br><br>Annually | Country | 1; 100% | 1; 100% | 1; 100% | 1; 100% | 1; 100% | 1; 100% | | | | |
| 1.1.7 | Number and percentage of IRS country programs that conduct a Post-Spray Data Quality Audit within 90 days of spray completion | X | Data Collection Forms<br><br>Annually | Country | N/A | N/A | N/A | N/A | N/A | N/A | TBD | | TBD | |
| 1.1.8 | Number of Insecticide Treated Nets (ITNs) distributed, by channel | | Project Records<br>Annually | Country<br>Channel | N/A | N/A | TBD | N/A | TBD | N/A | TBD | | TBD | |
| 1.1.9 | Number and percentage of countries completing ITN durability monitoring data collection as planned in a given project year | X | Project Records<br><br>Annually | Country | | | | | | | | | | |
| 1.1.10 | Number and percentage of PMI-funded durability monitoring surveys with reports submitted within 90 days of the end of data collection | X | Project Records<br><br>Annually | Country | | | | | | | | | | |
| 1.2 | Strengthen Capacity of NMCPs, VC Personnel, and Other Institutions to Implement and Manage IRS and Other VC Activities | | | | | | | | | | | | | |
| 1.2.1 | Total number of people trained to support VC in target areas | | Project Training Records<br><br>Annually | Country<br>VC Intervention<br>Sex<br>Job Function | 2,205 | 2,227<br>Males : 1,789<br>Females :438 | 2,227 | 2,045<br>Males : 1,648<br>Females :397 | 2,045 | 1,493<br>Males : 1,228<br>Females : 265 | TBD | | TBD | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 1.2.2 | Total number of people trained to support VC in target areas with USG funds2 | | Project Training Records<br><br>Annually | Country<br>VC Intervention<br>Sex<br>Job Function | IRS | SOPs: 749<br>TLs: 125<br>Supervisor: 273<br>IRS | IRS | SOPs: 547<br>TLs:109;<br>Supervisor: 272<br>IRS | SOPs: 661<br>TLs:132;<br>Supervisor: 272 | SOPs: 521<br>TLs:105;<br>Supervisor: 253 | | | | |
| 1.2.3 | Number of people trained during the Master (National) Training and/or IRS Training of Trainers. | | Project Training Records<br><br>Annually | Country<br>Sex<br>Type of Training | 128 | 274<br>Males: 240, 87.9%<br><br>Females: 34, 12.5% | 274 | 275<br>Males: 240, 87.3%<br>Females : 35, 12.7% | 275 | 25<br>Males:19; 76%<br>Females : 6; 24% | TBD | | TBD | |
| 1.2.4 | Total number of people hired to support VC in target areas. | | Project Records<br><br>Annually | Country<br>VC Intervention<br>Sex<br>Job Function | 1,808 | 1,147<br><br>M: 958, 83.5%<br>F: 189, 16.5%<br><br><br><br>SOPs: 749<br>TLs: 125<br>Supervisors: 273<br>IRS | 1,147 | 2,045<br>M: 1,648; 80.58%<br>F: 397, 19.41%<br><br>SOPs: 547<br>TLs:109;<br>Supervisor: 272 | 2,045 | 1,394<br>Male: 1,142; 81.92%<br>F: 252, 18.07%<br><br>SOPs: 521<br>TLs:105;<br>Supervisor: 253 | TBD | | TBD | |
| 1.2.5 | Number of VC project training workshops targeting NMCP and other host country staff | | Project Training Records<br><br>Annually | Country<br>Technical Area<br>Job Function | N/A | N/A | TBD | N/A | 4 | 4 | TBD | | TBD | |
| 1.2.6 | Number of NMCP and other vector control host country staff who have logged into VectorLink Collect | | DHIS2 Logs<br>Annually | Country<br>Job Function | N/A | N/A | 15 | 15 | 15 | 16 | TBD | | TBD | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 1.2.7 | Number and percentage of technical assistance requests to support ITN distribution planning and/or implementation completed on time as planned in a given project year | X | Project Records<br><br>Annually | Country<br>Technical Area<br>Channel | | | | | | | | | | |
| 1.2.8 | Number and percentage of technical assistance requests to support operational routine monitoring systems for continuous ITN distribution completed on time as planned in a given project year | X | Project Records<br><br>Annually | Country<br><br>Channel | | | | | | | | | | |
| 1.3 | Environmental Compliance and Safety | | | | | | | | | | | | | |
| 1.3.1 | Number of seasonal vector control personnel trained in environmental compliance and personal safety standards in vector control implementation | | Project Training Records<br><br>Annually | Country<br>Sex (# and %)<br>Job Function | 2,171 | 2,227 | 2,227 | 2,045 | 2,045 | 917 | TBD | | TBD | |
| 1.3.2 | Number of health workers receiving insecticide poisoning case management training | | Project Training Records<br><br>Annually | Country<br>Sex (# and %) | 66 | 98 | 70 | 70 | 70 | 51 | TBD | | TBD | |
| 1.3.3 | Number of adverse reactions to pesticide exposure documented that resulted in a referral for medical care | | Incident Report Forms<br><br>Annually | Country<br>Type of Exposure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| 1.3.4 | Number of SEAs and Letter Reports submitted at least 60 days prior to the commencement of VC campaigns | X | Project Records<br><br>Annually | Country | | | | | | | | | | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 1.3.5 | Number and percentage of permanent and mobile soak pits inspected and approved prior to IRS campaigns or before first use | | Project Records - PSECAs<br><br>Annually | Country | 34; 100% | 34; 100% | 22; 100% | 22/22, 100% | 14; 100% | 23; 100% | TBD; 100% | | TBD; 100% | |
| 1.3.6 | Number and percentage of storehouses inspected and approved prior to IRS campaigns | | Project Records - PSECAs<br><br>Annually | Country<br>Storehouse Type | 37; 100% | 36; 97% | 37; 100% | 22/22, 100% | 22; 100% | 23; 105% | TBD; 100% | | TBD; 100% | |
| 1.4 | Promote Gender Equality in all Facets of Planning and Implementation | | | | | | | | | | | | | |
| 1.4.1 | Number and percentage of women hired to support VC campaigns | | Project Records<br><br>Annually | Country<br>Sex (# and %)<br>Job Function | 632; 35% | 453; 19,67% | 572, 25% | 398, 26.9% | 398; 45% | 246; 17.53% | TBD; 50% | | TBD; 50% | |
| 1.4.2 | Number and percentage of women hired in supervisory roles in target areas for VC activities | | Project Records<br><br>Annually | Country<br>Sex (# and %)<br>VC Intervention<br>Job Function | 78; 50% IRS | Females 36, 13.19% Team Leaders 24; 19.20% Site Manager: 1; 3.03% NMCP:1; 16.67% ICP:10, 0.99% | 36 IRS | Females 38/36, 105.5% Team Leaders 18; (18/109) 16.5% Site Manager: 1; (1/22) 4.7% NMCP : 3; (3/9); 33% ICP : 16/77, 20.7% | 36; 100% | Females 22; 12.64% Team Leaders 18; 17.14% NMCP 2; 9.09% ICP: 2; 7.41% | TBD; 50% | | TBD; 50% | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 1.4.3 | Number and percentage of trainees (permanent and seasonal) who have completed gender awareness training | | Project Records<br><br>Annually | Country<br>Sex (# and %)<br>Job Function | 2,006; 100% | 2,227/2006; 110%<br><br>Males : 1,789/2,227; 80,33%<br><br>Females: 438/2,227; 19,67% | 2045; 100% | 2,045 /2,045, 100%<br>Males : 1,648 /2,045; 80,6%<br>Females: 397/2,045; 19,4% | 2,045; 100% | 1,403<br><br>Males : 1,157; 82%<br>Female: 246; 18% | TBD; 100% | | | |
| 1.4.4 | Number and percentage of women in senior leadership roles in VectorLink country offices | X | Project Records<br><br>Annually | Country<br><br>Sex (# and %) | | | | 1 | TBD | NA | | | | |
| 1.5 | Implement and Support SBCC and Mobilization Activities | | | | | | | | | | | | | |
| 1.5.1 | Number of radio spots and talk shows aired | | Project Records<br><br>Annually | Country<br><br>VC Intervention<br><br>Talk Show or Radio Spot | 120 | 120 | 120 | 120 | 120 | 124 | TBD | | TBD | |
| 1.5.2 | Number of print materials distributed to or targeted at beneficiaries | | Project Records<br><br>Annually | Country<br><br>VC Intervention | 140 | 140 | 140 | 140 | 140 | 260 | TBD | | TBD | |
| 1.5.3 | Number of people reached with vector control and/or SBCC messages via door-to-door messaging | | Project Records<br><br>Annually | Country<br>VC Intervention<br>Sex | 867,715 | 63,348* Door-to-door by IEC mobilizers (messaging was mostly done via radio spots) | 63,348 | 103,706 | 103,706 | 138,723 | TBD | | TBD | |
| | 2. Entomological and Epidemiological Data to Drive Decision-Making | | | | | | | | | | | | | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 2.1 | Vector Control Activities Monitored via Entomological and Epidemiological Data | | | | | | | | | | | | | |
| 2.1.1 | Number of project-supported entomological sentinel sites established to monitor vector bionomics (vector species, distribution, seasonality, feeding time, and location) | | Entomological Reports<br><br>Annually | Country<br>VC<br>Intervention | 9; 100% | 9;100% | 14; 100% | 14; 100% | 14, 100% | 14, 100% | TBD; 100% | | TBD; 100% | |
| 2.1.2 | Number and percentage of vector bionomics monitoring sites measuring all basic entomological indicators (species composition, indoor and outdoor human biting rates, hourly human biting rates, indoor resting densities) | | Entomological Reports<br><br>Annually | Country<br><br>VC<br>Intervention | 9; 100% | 9;100% | 14; 100% | 14; 100% | 14, 100% | 14, 100% | TBD; 100% | | TBD; 100% | |
| 2.1.3 | Number and percentage of vector bionomics monitoring sites measuring the following all advanced entomological indicators: sporozoite rates and entomological inoculation rates | | Entomological Reports<br><br>Annually | Country<br><br>IRS or Entomology Only Program | 9; 100% | 9;100% | 14; 100% | 14; 100% | 14, 100% | 14, 100% | TBD; 100% | | TBD; 100% | |
| 2.1.4 | Number and percentage of insecticide resistance monitoring sites that tested all priority insecticides for the relevant local vector control intervention | | Entomological Reports<br><br>Annually | Country<br><br>VC<br>Intervention | 18; 100% | 18;100% | 12; 100% | | 12, 100% | TBD | TBD; 100% | | TBD; 100% | |
| 2.1.5 | Number and percentage of houses in which WHO cone bioassays were conducted within two weeks of spraying with greater than 98% test mortality recorded for IRS countries | | Entomological Reports<br><br>Annually | Country<br><br>Insecticide Type | 12; 100% | 12;100% | 30; 100% | 30; 100% | 30; 100% | 20; 67% | TBD; 100% | | TBD; 100% | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 2.1.6 | Number and percentage of sites that conducted WHO cone bioassays after the completion of spraying at monthly intervals until test mortality drops below 80% for two consecutive months for IRS countries | | Entomological Reports<br><br>Annually | Country<br><br>Insecticide Type | 3; 100% | 3;100% | 3; 100% | | 3; 100% | TBD | TBD; 100% | | TBD; 100% | |
| 2.1.7 | Number of countries with an integrated vector control analytics dashboard created by PATH, available for decision-making | X | Project Reports<br><br>Annually | Country | N/A | N/A | 1(100%) | 1(100%) | 1: 100% | | TBD; 100% | | TBD; 100% | |
| 2.1.8 | Number of people trained (VectorLink and non VectorLink staff) in entomological monitoring | | Project Records<br><br>Annually | Country<br><br>Sex (# and %) | 8 | 10<br>Males : 7, 70%<br>Females :3, 30% | 5 | TBD | TBD | TBD | TBD | | TBD | |
| 2.1.9 | Number and percentage of sites in which WHO cone bioassays were conducted to evaluate bio-efficacy of bed nets | | Entomological Records<br><br>Annually | Country | 0; N/A | 0; N/A | 0; N/A | 0; N/A | 2; 100% | 2; 100% | TBD; 100% | | TBD; 100% | |
| 2.1.10 | Number of nets in which WHO cone bioassays were conducted to evaluate bio-efficacy of bed nets | | Entomological Records<br><br>Annually | Country | 0; N/A | 0; N/A | 0; N/A | 0; N/A | 90; 100% | 90; 100% | TBD; 100% | | TBD; 100% | |
| 2.2 | NMCPs Develop Country-Level IRS and Other Malaria VC Strategies | | | | | | | | | | | | | |
| 2.2.1 | Number and percentage of countries with an integrated malaria vector control strategy, including a plan for monitoring and managing insecticide resistance supported by the project | X | Project Records<br><br>Annually | Country | | | | | | | | | | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 2.2.2 | Number and percentage of countries with a data and visualization dashboard complete for IRS and/or entomology data in VectorLink Collect for vector control decision making | X | Project Records<br><br>Annually | Country | | | | | | | | | | |
| 2.2.3 | Number of countries that implement sub-national insecticide rotation | X | Project Records<br><br>Annually | Country | | | | | | | | | | |
| 2.3 | Build capacity of NMCPs and local institutions to collect, analyze, and use data for strategic malaria control decision-making | | | | | | | | | | | | | |
| 2.3.1 | Number of individuals trained from NMCPs and national institutions to review and interpret data for integrated vector control decision making | | Project Training Records<br><br>Annually | Country<br>Job Function<br>Organization | N/A | N/A | TBD | 2 | 2 | 1 | TBD | | TBD | |
| 2.3.2 | Number and percent of targeted individuals that report using new analytical tools and/or skills in their planning, resourcing, implementation, or measurement activities | | Capacity Assessments<br><br>Thrice Over Project Life | Country<br>Job Function<br>Organization | N/A | N/A | 10; 100% | 10; 100% | 10 | 10; 100% | TBD | | TBD | |
| | 3. Procurement and Logistics | | | | | | | | | | | | | |
| 3.1 | Cost-Effective Procurement Mechanism Established | | | | | | | | | | | | | |
| 3.1.1 | Number and percentage of insecticide procurements that had a pre-shipment QA/QC test, done by a third party, at least 60 days prior to spray campaign | X | Procurement Records<br><br>Annually | Country<br><br>Insecticide Type | | | | | | | | | | |
| 3.1.2 | Number and percentage of insecticide procurements received on-time to allow for the initiation of spray operations as scheduled | | Procurement Records<br><br>Annually | Country<br><br>Insecticide Type | 1; 100% | 1; 100% | 1; 100% | 1; 100% | 1; 100% | 1;100% | TBD; 100% | | TBD; 100% | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 3.1.3 | Number and percentage of targeted countries with international equipment procurements, including PPE, received on-time to allow for the initiation of vector control campaigns as scheduled | X | Procurement Records<br><br>Annually | Country<br><br>VC Intervention | | | | | | | | | | |
| 3.1.4 | Number of VectorLink staff trained on procurement | X | Project Records<br><br>Annually | Country | | | | | | | | | | |
| 3.2 | Robust Inventory Management and Logistics Systems Established | | | | | | | | | | | | | |
| 3.2.1 | Number and percentage of logistics and warehouse personnel (seasonal and full-time) trained in VC supply chain management | | Project Training Records<br><br>Annually | Country<br>VC Intervention<br>Sex<br>Job Function | 36; 100% | 40; 100% | 40; 100% | 26; 65% | 33; 100% | 23; 69% | TBD; 100% | | TBD; 100% | |
| 3.2.2 | Number and percentage of operations site warehouses where physical inventories can be verified by daily stock records | | Inventory and Stock Records<br><br>Annually | Country | 36; 100% | 36; 100% | 22; 100% | 22; 100% | 33; 100% | 20; 60% | TBD; 100% | | TBD; 100% | |
| 3.2.3 | Number and percentage of IRS countries that successfully completed spray operations without an insecticide stock-out | X | Inventory and Stock Records<br><br>Annually | Country<br><br>Insecticide Type | | | | | | | | | | |
| | 4. Innovation | | | | | | | | | | | | | |
| 4.1 | Conduct operational research or monitoring to scale up new tools, methods, and approaches | | | | | | | | | | | | | |
| 4.1.1 | Number of operational research studies on promising new tools or new methods/approaches to existing tools that are implemented | | Project Records<br><br>Annually | Country<br><br>Type of Innovation | N/A | N/A | 2<br>Mobile Data Collection<br>Mobile Payment of Seasonal workers | 2<br>Mobile Data Collection<br>Mobile Payment of Seasonal workers | 2 | 1<br>Electronic Seasonal Timesheet | TBD | | TBD | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 4.2 | Create and share knowledge through dissemination of best practices and lessons learned | | | | | | | | | | | | | |
| 4.2.1 | Number of innovations, best practices, and other data or lessons learned shared with other partners or international institutions for global reporting on the Vector Learning Exchange | X | Project Records<br><br>Annually | Country<br><br>Technical Area | | | | | | | | | | |
| 4.2.2 | Number of individual members who use the Vector Learning Exchange | X | Project Records<br>Annually | N/A | | | | | | | | | | |
| 4.2.3 | Number of symposia and/or presentations submitted to and accepted at global conferences | | Project Records<br><br>Annually | Country<br>Technical Area | N/A | N/A | TBD | 0 | 1 | 0 | TBD | | TBD | |
| 4.2.4 | Number of success stories written or videos produced and shared on the VectorLink project website | | Project Records<br><br>Annually | Country | 2 | 3 | 3 | 1 | 2 | 0 | TBD | | TBD | |
| 4.2.5 | Number of peer-reviewed journal articles submitted and accepted | X | Project Records<br>Annually | Technical Area | | | | | | | | | | |
| 4.2.6 | Number of contributions to vector control global or country policy and/or guidance documents | | Project Records<br><br>Annually | Country<br><br>Technical Area | N/A | N/A | N/A | N/A | N/A | N/A | TBD | | TBD | |
| 4.3 | Develop and deploy cost-savings approaches | | | | | | | | | | | | | |
| 4.3.1 | Number of innovative or novel approaches implemented to achieve cost savings in IRS and integrated malaria vector control programs | | Project Records<br><br>Annually | Country<br><br>VC Intervention | TBD | | TBD | | TBD | 0 | TBD | | TBD | |

| # | Performance Indicator | Global Project Indicator | Data Source(s) and Reporting Frequency | Disaggregation (s) | Annual Targets and Results | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
| | | | | | Target | Result | Target | Result | Target | Result | Target | Result | Target | Result |
| 4.3.2 | Number of cost effectiveness assessments of existing approaches in the implementation of IRS and integrated malaria vector control programs | | Project Records<br><br>Annually | Country<br><br>VC Intervention | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | |
| 4.4 | Cultivate public-private partnerships | | | | | | | | | | | | | |
| 4.4.1 | Number of private sector entities engaged with to establish public private partnerships to increase the quality and coverage of malaria vector control activities globally | | Project Records<br><br>Annually | Country | 1 | 1 | 0 | 0 | 0 | 0 | TBD | | TBD | |

# ANNEX B: ENVIRONMENTAL MITIGATION AND MONITORING REPORT

| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| 1. Education, Technical Assistance, Training | Availability of appropriate teaching modules | N/A | N/A |
| 2. Research and Development<br>• Implement laboratory environmental, health, and safety (EHS) manuals with standard operating procedures (SOPs), or use existing SOPs, for laboratory operations in accordance with country-specific compliance mechanisms.<br>• Implement SOPs for the safe storage, transport, and use of equipment, chemical reagents, insecticides, and supplies in conformance with international best practices (e.g., WHO, FAO) and host country requirements. Provide training to workers on the approved SOPs or Waste Management Plan (WMP) developed for properly handling and disposing of wastes. | Entomology activities are entrusted to the Institute of Research in Health Sciences/Institut de Recherche en Sciences de la Santé (IRSS) de Bobo Dioulasso. (Center complying with international guidelines) as sub-contractor to PMI VectorLink | N/A | N/A |
| 3. Public Health Commodities | N/A | N/A | N/A |
| 4. Small-Scale Construction<br>• Obtain all needed authorizations prior to construction: permits, environmental and social impact assessments, etc.<br>• Retain competent, licensed professionals to design and supervise construction<br>• Establish health, safety and environmental obligations in all contracts.<br>• Complete a site emergency action plan<br>• Provide safety training to all workers using construction equipment<br>• Identify closest health care facility to handle injuries | N/A | N/A | N/A |

| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| • Asbestos, lead based paints and other toxic materials will not be used under any circumstances. If the presence of asbestos is suspected in a facility to be renovated, the facility must be tested before rehabilitation works begins. Should asbestos be present, then the work must be carried out in conformity with host country requirements and with guidance to be provided by the Implementing Partner. All results of the testing for asbestos shall be communicated to the COR<br><br>• Develop and follow a waste management plan (WMP). Identify authorized recycling or disposal facilities prior to generation of waste.<br><br>• Minimize the generation of waste by:<br>- Correctly assessing material needs (not over-buying)<br>- Reducing amount of packaging used by suppliers<br>- Reusing material on site, such as use of discarded materials for leveling ground and filling trenches, etc.<br>• Designate secure on-site waste storage facilities<br>• Ensure all workers are trained and dispose of wastes properly.<br>• Complete and track hazardous waste manifests for all shipments<br>• Source all construction material from an ecologically safe provider.<br>• Contractor must provide and all workers must use personal protective equipment (PPE) such as hardhats, footwear, dust mask, safety glasses and reflective vests, as needed.<br>• Ensure first aid and spill clean-up kits are easily available<br>• Contractors must comply with the "Small-Scale Construction" chapter of the USAID Sector | | | |

| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| Environmental Guidelines (www.usaidgems.org/sectorGuidelines.htm).<br>• Contractor will provide drinking water, latrine and a handwashing station to workers.<br>• Contractors will arrange working hours to minimize disruption to the community.<br>• If needed, construct drainage canals and infiltration pits for management of storm water and prevention of soil erosion.<br>• Post-construction: ensure leftover materials have been properly disposed of. | | | |
| 5. Small-Scale Water and Sanitation | N/A | N/A | N/A |
| 6. Nutrition | N/A | N/A | N/A |
| 7. Vector Control<br>• Insecticide selection for any USAID-supported malaria program is subject to the criteria listed in the USAID Programmatic Environmental Assessment, country SEAs, and host country requirements.<br>• Procurement and inventory logs must be maintained.<br>• Ensure storage facility and personal protective equipment (PPE) are appropriate for the active ingredient used and in accordance with approved SOPs.<br>• Distribute insecticides to facilities that can manage such commodities safely in storage, use, and disposal (i.e. in a manner generally equivalent to Implementing Partner's own SOPs/WMP) | • PMI VectorLink Burkina Faso used the insecticides: clothianidin (Sumishield 50 WG) and the clothianidin and deltamethrin combination (Fludora Fusion) during the 2020 spray campaign. These insecticides are listed in the USAID Programmatic Environmental Assessment and in the Burkina Faso SEA requirements.<br>• Procurement and inventory logs are regularly updated.<br>• 23 storage facilities were refurbished and inspected by the ECO to ensure environmental compliance prior to the start of IRS operations. Appropriate PPE was provided to all staff involved in IRS operations.<br>• All sites were inspected to ensure proper management of insecticide storage, use, and disposal.<br>• 157 tricycles used for transportation during the | N/A | N/A |

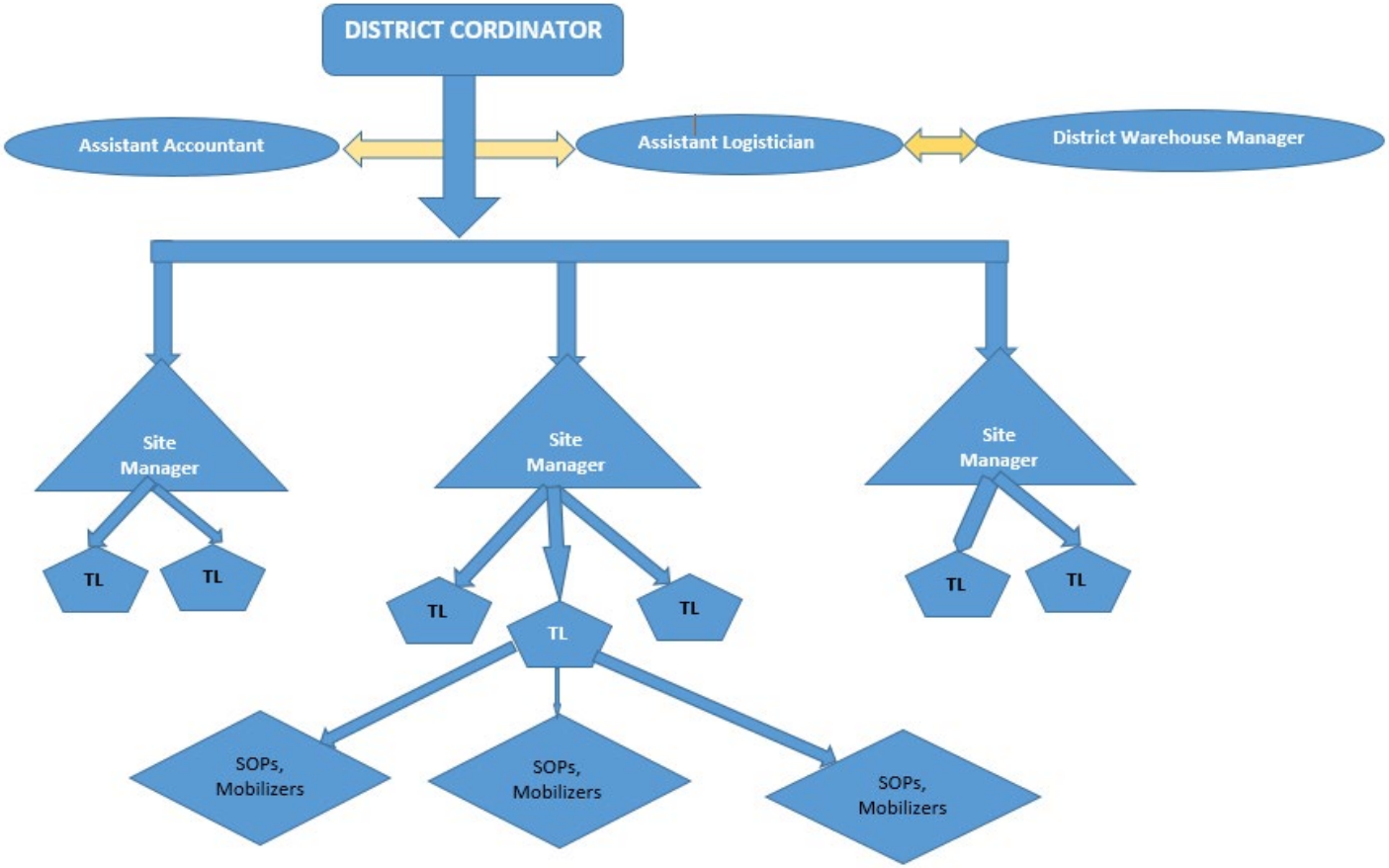
| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| • Inspect and certify vehicles used for insecticide or team transport prior to contract.<br>• Train drivers<br>• Ensure availability of cell phone, personal protective equipment (PPE) and spill kits during insecticide transportation.<br>• Initial and 30-day pregnancy testing for female candidates for jobs with potential insecticide contact.<br>• Health test all spray team members for duty fitness.<br>• Procure, distribute, and train all workers with potential insecticide contact on the use of PPE.<br>• Train operators on mixing insecticides and the proper use and maintenance of application equipment.<br>• Provide adequate facilities and supplies for end-of-day cleanup.<br>• Enforce application and clean-up procedures.<br>• Implement Information, Education and Communication (IEC) campaigns to inform homeowners of responsibilities and precautions, including washing itchy skin and | campaign were inspected and certified according to best practices. All vehicles were equipped with spill kits and first aid kits.<br>• Driver training was conducted on May 26, 2020. A total of 161 drivers were trained for the 2020 spray campaign.<br>• All drivers had cell phones as a pre-requisite for hiring and were provided with PPE and spill kits after being trained inspection vehicle.<br>• PMI VectorLink Burkina Faso conducted supervisions for the morning mobilization vehicle inspection.<br>• Medical examinations and pregnancy tests were conducted before hiring spray operators, teams leaders, sites leaders and washers from May 28 to May 30, 2020.<br>• Both International and local procurement were carried out successfully prior to all trainings.<br>• The correct insecticide mixing procedure was included in all trainings. Pump technicians were trained on the maintenance of spray pumps and on triple rinsing (April 28-29 in Solenzo and May 1-2 in Kampti).<br>• Adequate facilities and supplies were acquired for end-of-day cleaning.<br>• Clean-up procedures were enforced<br>• 473 mobilizers and town criers made the community aware of the behaviors to adopt before, during and after the spraying of | N/A<br><br>N/A | N/A<br><br>N/A |

| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| going to health clinic if symptoms develop and do not subside<br><br>• Ensure health facility staff are aware of insecticide poisoning management<br><br>• Storage facilities and transportation vehicles must be physically secured to prevent theft.<br><br>• Maintain records of all insecticide receipts, issuance, and return of empty containers.<br><br>• Conduct analysis comparing number of houses treated vs. number of containers used.<br><br>• Examine houses treated to confirm application<br><br>• Perform physical inventory counts during the application season.<br><br>• For shipments of insecticide over water, sachets/ bottles will be packed in 220 liter open top barrels with a water-tight top and a locking ring, or in a similar durable container. Waterproof labeling must be affixed to the barrel, with the identity of the pesticide, number of bottles inside, the weight, the type of hazard posed by the contents, and the personal protective equipment to be worn when handling the barrel.<br><br>• Train applicators on the SEA operational requirements, SOPs, PMI BMPs, and approved WMP, developed for the safe and | structures with the support of village leaders, ICPs and other leaders. Two community radios were also used for mobilization.<br><br>• 51 health workers were trained on intoxication cases from May 4 to May 8, 2020.<br><br>• 23 stores had double locks as a way to reinforce security measures.<br>• Storekeeper performance forms were regularly completed to ensure the insecticide stock records were up to date and to assess the movement of insecticides.<br>• A total of 162,037 houses were treated with 37,128 sachets of insecticide: one sachet of Fludora Fusion treated on average of 4.4 structures, and 4.4 structures were treated with one SumiShield 50 WG.<br><br>• Direct Observation Spraying was conducted by supervisors to assess the quality of spray techniques.<br><br>• Storekeepers and supervisors were trained to perform physical inventory counts during the campaign.<br><br>• PMI VectorLink Burkina Faso did not transport insecticide over water during the course of the campaign for IRS.<br><br>• 521 SOPs were trained on BMP guidelines and Burkina Faso environmental compliance's laws which included standard operating procedures and the waste management plan.<br><br>• SOPs and other seasonal workers wore the appropriate PPE suited for use of Clothianidin | N/A | |

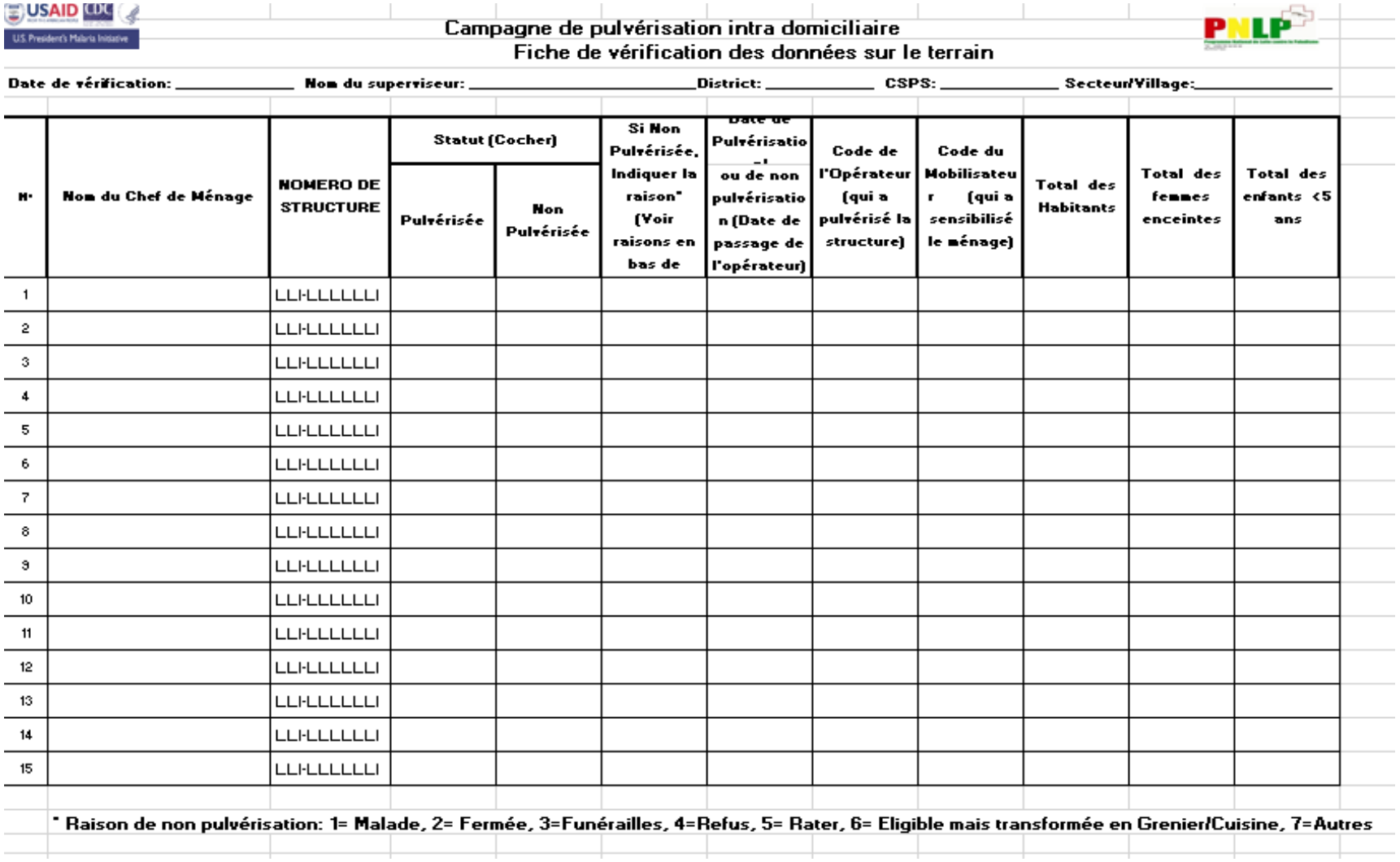
| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| effective storage, distribution, application, and disposal of insecticides<br><br>• Ensure application equipment and PPE are appropriate for the active ingredient used and in accordance with approved SOPs, and maintain equipment to avoid leaks.<br><br>• Maintain application equipment<br><br>• No application of insecticides within 30 yards of beekeeping sites<br><br>• Handling, treatment, and disposal of nonhazardous (general waste) and hazardous wastes must be in accordance with the approved WMP/SOPs and the PMI BMPs.<br><br>• The WMP, which outlines SOPs for managing waste processes, must be in accordance with PMI best practices and host country requirements<br><br>• Choose sites for disposal of liquid wastes, including fixed and mobile soak pit sites according to PMI BMPs<br><br>• Construct fixed and mobile soak pits with charcoal according to the BMPs to adsorb insecticide from rinse water<br><br>• Maintain soak pits as necessary during season<br><br>• Monitor waste storage and management during campaign | and deltamethrin during spraying and clean-up in accordance with approved standard operating procedures.<br><br>• All pumps were packed and stored at the end of each day of spraying according to the standard operating procedures for pump maintenance.<br><br>• Beekeeping sites and other protected areas were not sprayed.<br><br>• The project has a contract with non-governmental organizations specialized in the management of wastes generated during IRS operations (empty boxes, and empty sachets of insecticides, used masks and gloves, etc.).<br><br>• Burkina Faso waste management plan has met all requirements of the country and the USAID 22 CFR regulation.<br><br>• All soak pits were constructed or rehabilitated in compliance with standards requirements for proper disposal of liquid waste during the campaign.<br><br>• All fixed and mobile soak pits contained charcoal according to BMPs to absorb the insecticide from rinsing water.<br><br>• Soak pits were maintained as necessary. Weeds were removed near the rinsing areas.<br><br>• Waste management was monitored during the campaign<br><br>• Waste disposal procedure was monitored after the campaign | | |

| List each Mitigation Measure from Column 3 in the EMMP | Status of Mitigation Measures | List Any Outstanding Issues Relating to Required Conditions | Remarks |
|---|---|---|---|
| • Monitor disposal procedures post-campaign<br><br>• Wastes will only be disposed in incinerators that comply with PMI BMPs Collect and maintain treatment and disposal documents and records on file<br><br>• Country-level USAID EC documentation must contain guidance on proper disposal of wastes | • SAPHYTO incinerator will be used. Incineration certificate will be made available.<br><br>• Country-level USAID EC documentation contains guidance on proper disposal of wastes | | |
| 8. Emergency Response | N/A | N/A | N/A |

# ANNEX C: SPRAY TEAM ORGANIGRAM



# ANNEX D: DCV FORM



Campagne de pulvérisation intra domiciliaire

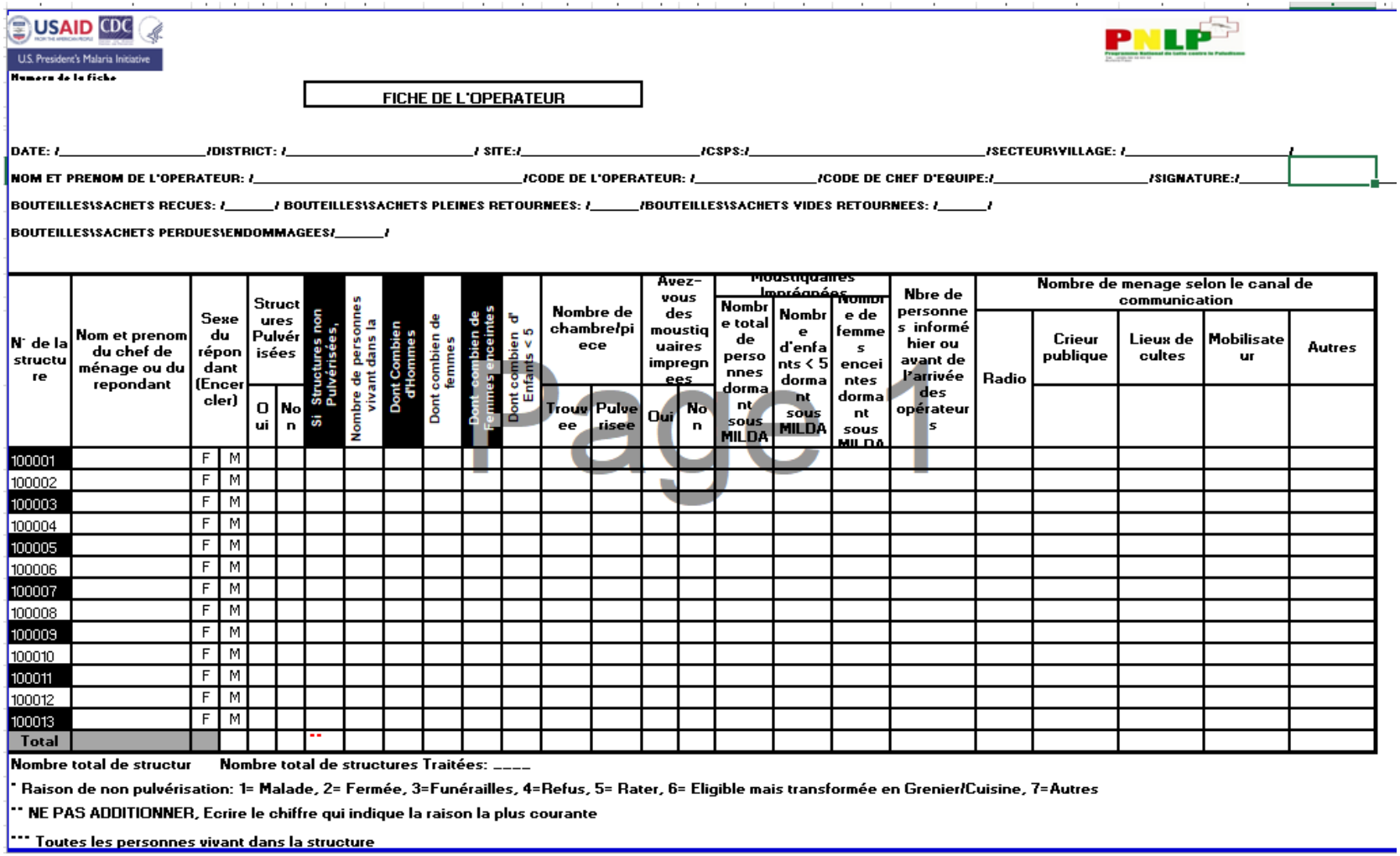
Fiche de vérification des données sur le terrain

Date de vérification: _____ Nom du superviseur: _____ District: _____ CSPS: _____ Secteur/Village: _____

| N° | Nom du Chef de Ménage | NOMERO DE STRUCTURE | Statut (Cocher) | | Si Non Pulvérisée, Indiquer la raison* (Voir raisons en bas de | Date de Pulvérisation ou de non pulvérisation (Date de passage de l'opérateur) | Code de l'Opérateur (qui a pulvérisé la structure) | Code du Mobilisateur (qui a sensibilisé le ménage) | Total des Habitants | Total des femmes enceintes | Total des enfants <5 ans |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Pulvérisée | Non Pulvérisée | | | | | | | |
| 1 | | LLLLLLLLL | | | | | | | | | |
| 2 | | LLLLLLLLL | | | | | | | | | |
| 3 | | LLLLLLLLL | | | | | | | | | |
| 4 | | LLLLLLLLL | | | | | | | | | |
| 5 | | LLLLLLLLL | | | | | | | | | |
| 6 | | LLLLLLLLL | | | | | | | | | |
| 7 | | LLLLLLLLL | | | | | | | | | |
| 8 | | LLLLLLLLL | | | | | | | | | |
| 9 | | LLLLLLLLL | | | | | | | | | |
| 10 | | LLLLLLLLL | | | | | | | | | |
| 11 | | LLLLLLLLL | | | | | | | | | |
| 12 | | LLLLLLLLL | | | | | | | | | |
| 13 | | LLLLLLLLL | | | | | | | | | |
| 14 | | LLLLLLLLL | | | | | | | | | |
| 15 | | LLLLLLLLL | | | | | | | | | |

* Raison de non pulvérisation: 1= Malade, 2= Fermée, 3=Funérailles, 4=Refus, 5= Rater, 6= Eligible mais transformée en Grenier/Cuisine, 7=Autres

# ANNEX E: SPRAY OPERATION FORM



USAID CDC — U.S. President's Malaria Initiative

PNLP

Numero de la fiche

**FICHE DE L'OPERATEUR**

DATE: /_____/DISTRICT: /_____/ SITE:/_____/CSPS:/_____/SECTEUR\VILLAGE: /_____/

NOM ET PRENOM DE L'OPERATEUR: /_____/CODE DE L'OPERATEUR: /_____/CODE DE CHEF D'EQUIPE:/_____/SIGNATURE:/_____

BOUTEILLES\SACHETS RECUES: /_____/ BOUTEILLES\SACHETS PLEINES RETOURNEES: /_____/BOUTEILLES\SACHETS VIDES RETOURNEES: /_____/

BOUTEILLES\SACHETS PERDUES\ENDOMMAGEES/_____/

| N° de la structure | Nom et prenom du chef de ménage ou du repondant | Sexe du répondant (Encercler) | | Structures Pulvérisées | | Si Structures non Pulvérisées, | Nombre de personnes vivant dans la | Dont Combien d'Hommes | Dont combien de femmes | Dont combien de Femmes enceintes | Dont combien d' Enfants < 5 | Nombre de chambre/piece | | Avez-vous des moustiquaires impregnees | | Moustiquaires Imprégnées | | | Nbre de personnes informé hier ou avant de l'arrivée des opérateurs | Nombre de menage selon le canal de communication | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | Nombre total de personnes dormant sous MILDA | Nombre d'enfants < 5 dormant sous MILDA | Nombre de femmes enceintes dormant sous MILDA | | Radio | Crieur publique | Lieux de cultes | Mobilisateur | Autres |
| | | | | Oui | Non | | | | | | | Trouvee | Pulverisee | Oui | Non | | | | | | | | | |
| 100001 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100002 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100003 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100004 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100005 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100006 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100007 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100008 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100009 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100010 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100011 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100012 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| 100013 | | F | M | | | | | | | | | | | | | | | | | | | | | |
| Total | | | | | | ** | | | | | | | | | | | | | | | | | | |

Page 1

Nombre total de structur  Nombre total de structures Traitées: ____

* Raison de non pulvérisation: 1= Malade, 2= Fermée, 3=Funérailles, 4=Refus, 5= Rater, 6= Eligible mais transformée en Grenier/Cuisine, 7=Autres

** NE PAS ADDITIONNER, Ecrire le chiffre qui indique la raison la plus courante

*** Toutes les personnes vivant dans la structure