



U.S. President's Malaria Initiative



Technical Brief

Environmental Compliance & Safety

Innovation Punctuates Protocols

The PMI VectorLink Project works to assure that its vector control activities mitigate negative environmental impacts and accentuate the positives in all targeted communities. To accomplish this, PMI VectorLink uses a variety of methods and protocols, from the use of smartphones to monitor environmental compliance/safety of IRS program implementation, to developing mobile soak pits to assure the safe disposal of liquid insecticide wastes in remote areas. The project has partnered with various local environmental organizations in its project countries to reuse or recycle byproducts from annual IRS campaigns that would once have been incinerated or disposed of in landfills.

Environmental Compliance Assurance Program (ECAP)

PMI VectorLink uses ECAP – a comprehensive system of assessments, reports, corrective actions, and follow-up inspections – to address the environmental health and safety aspects of spray activities, the security of facilities where insecticides and other hazardous materials are stored, and the safe handling and transport of insecticides. ECAP provides clear



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direction on what must be done and enables management to have a real-time picture of the status of environmental compliance during campaign preparation and execution.

System of Protocols

PMI VectorLink trains and supervises workers to ensure they understand and embrace environmental health and safety best practices for all IRS campaign activities. To supervise operations, reinforce basic environmental compliance concepts, and ensure that compliance is well-documented, PMI VectorLink has trained IRS campaign staff to complete checklists while monitoring IRS execution. The checklists cover a variety of topics to assure thorough supervision of IRS activities at all stages.

Mobile Phone Data Collection

PMI VectorLink uses a mobile phone application for environmental compliance, with which project staff can complete and have access to all environmental assessments and inspections electronically. The data collected is uploaded to an online database, and a work list is automatically distributed to assure that

the operations sites (the base of IRS campaign field implementation) are prepared for the spray campaign, noting for example whether soak pits need rebuilding before spraying can start. Inspection results are immediately available to management staff in country offices and in the U.S. home office. Fast access to this data provides timely notification of areas where enhanced supervision and reinforcement of key environmental compliance issues is needed, and allows timely corrective action. The smart phone also has photo and GPS capabilities, which provide verification of site conditions and location, and validation of the data record itself.

Plastic Bottle Recycling

PMI VectorLink countries often use insecticide that is packaged in plastic bottles. Since both incineration and burial of the bottles can create environmental hazards, PMI VectorLink develops partnerships with local environmental organizations to recycle the plastic bottles. After the bottles are collected and rinsed by the project country teams, the bottles are transported by the local environmental organization to the recycling centers, where the plastic bottles are crushed, ground, and re-manufactured into a variety of new materials that are readily needed in the project country. In some countries, The cardboard cartons in which the insecticide is delivered are also recycled.

Assuring Environmental Safety

Mobile Soak Pits

For all IRS programs, soak pits – large, in-ground filters – are used to dispose of liquid wastes from rinsing spray tanks and washing spray operators' protective gear. These soak pits adsorb and safely degrade the traces of insecticide found in the wash-water. In most spray areas, soak pits are more or less permanent installations built of concrete, stone, and carbon, in a central location that spray teams can access at the end of their spray day. However, in some hard-to-reach areas, it is difficult and sometimes impossible for spray teams to return to a fixed soak pit for clean-up purposes.

For this reason, PMI VectorLink uses a mobile soak pit. Developed under the PMI Africa Indoor Residual Spraying Project, the mobile soak pit is a 20-60 liter (depending on how many spray operators will use it) container with layers of foam filter material, screens, and activated carbon that can be installed almost wherever a spray team completes their daily operations. Since the mobile soak pit weighs about 9-25 kilos, it can be easily carried to a spray location, installed at a wash site in minutes, and used to catch and treat liquid insecticide waste. When spray operations in the area are complete, the soak pit is dug-up and carried away for use at the next location, while the site is restored to its original condition.

The mobile soak pits provide operational flexibility and reduced construction and labor costs over building permanent soak pits as PMI VectorLink estimates a mobile soak pit is 80-90% cheaper to construct than a permanent soak pit. Furthermore, mobile soak pits are better for operator health because cleanup can be performed immediately after completion of daily spraying, rather than having to travel to a central location. They improve control over potentially hazardous wastes because the wastes remain in the mobile soak pit until destruction by incineration, rather than in the ground.

In 2017, Peter Chandonait, PMI VectorLink Director of Environmental Compliance and Safety, was awarded the Grand Prize of USAID's Innovation to Action Award for creating and driving the adoption of a mobile soak pit. The Innovation to Action Award, a USAID Catalyst Award, recognizes USAID staff and implementing partners who have demonstrated exceptional leadership in motivating teams to test or implement innovative approaches through active or recently closed USAID projects/programs to increase program impact. In 2018, the PMI VectorLink Project used over 600 mobile soak pits to facilitate clean-up operations after spray days. In addition, several national governments are using mobile soak pits to filter out insecticides, including DDT, from IRS wash-water.

PMI VectorLink protects millions of people from malaria by supporting integrated vector control through the use of IRS and ITNS and robust entomological monitoring.