Private Sector Opportunities in Indoor Residual Spraying and Malaria Control in West Africa
A special thanks to our workshop co-hosts:

The West Africa Malaria Workshop was supported by:

**About GBCHealth’s Corporate Alliance on Malaria in Africa (CAMA)**
The Corporate Alliance on Malaria in Africa (CAMA) is a coalition of companies from across industries and around the world committed to decreasing the burden of malaria in Africa. CAMA brings the collective force and voice of the private sector to improve the impact of malaria control efforts in sub-Saharan Africa.

**About GBCHealth**
GBCHealth represents private sector companies and top NGOs leading the business fight for improved global health. Through work that includes supporting community programs; leveraging core competencies; facilitating leadership and advocacy by business leaders; and brokering public-private partnerships, GBCHealth helps drive the achievement of global health goals. GBCHealth also manages the private sector delegation to the Global Fund to Fight AIDS, Tuberculosis and Malaria, serving as an entry-point for corporate collaboration and engagement with the Fund and its recipients worldwide.
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# ACRONYMS & ABBREVIATIONS

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EXECUTIVE SUMMARY & KEY RECOMMENDATIONS

Indoor residual spraying (IRS) is one of the most effective malaria vector control interventions and has played a key role in malaria elimination in countries around the world. IRS remains a top priority for controlling malaria in Africa. The private sector has initiated, funded and managed many successful IRS programs, most frequently led by the extractive and agricultural industries and often in partnership with National Malaria Control Programs (NMCPs). Companies such as AngloGold Ashanti, Rio Tinto and the non-profit RTI International are exercising leadership in IRS programming and implementation, ensuring that their workforces and surrounding communities are protected from malaria through integrated and comprehensive programs.

With less than 800 days remaining before the December 31st, 2015 deadline of attaining the Millennium Development Goal (MDG) of zero malaria deaths, the time is right to increase private sector partnership in IRS programming to achieve global malaria goals.

In this context, GBHealth’s CAMA and the Roll Back Malaria Partnership (RBM) held a two-day workshop in September 2013 in Ghana to examine the challenges and opportunities related to private sector IRS and malaria control activities.

The event achieved the following results:

- Promoted and increased private sector engagement and investment in West African workplace and community IRS and malaria control activities
- Demonstrated the business case for IRS and malaria control in West Africa
- Highlighted best-in-class company IRS programs
- Shared IRS and resistance management trends from international and country-level experts
- Established connections among key malaria control stakeholders across sectors, including NMCP officials, Coalition and WHO representatives, technical and academic experts and corporate leaders

At the workshop, companies developed IRS knowledge and cultivated relationships with government and technical partners. Companies already managing IRS programs improved technical expertise and knowledge of best practices, learning from cross-sector colleagues to push the boundaries of corporate excellence in IRS programming. Companies considering new IRS programs took the first steps to protect their employees and communities and left the workshop inspired and committed.

Recommendations across all sectors included the following points:

COMPANIES CAN:

- Work with governments to align corporate IRS programs with national malaria control strategies. Companies should reach out to NMCPs to understand priorities and gaps where they can assist and also keep NMCPs informed of progress on corporate malaria programs.
• Collaborate with research organizations to develop more effective—and cost-effective—insecticide formulations for IRS that are active against resistant mosquitoes.
• Contribute to national IRS interventions beyond spraying, leveraging private sector strengths in operations and logistics, communication, and infrastructure development.

WEST AFRICAN GOVERNMENTS CAN:
• Increase the number of companies involved by developing and promoting the business case for corporate engagement in IRS. Governments should also develop strategies that build regional and national entomological capacity in collaboration with the private sector.
• Create an oversight committee that harmonizes nationwide malaria/IRS activities across stakeholders (e.g., Malaria Vector Control Oversight Committee in Ghana).
• West Africa is the region with the highest insecticide resistance in Africa.

Each country must initiate a vector control strategy that incorporates vector resistance management.
• Provide concrete guidance and recommendations for corporate involvement in IRS beyond parallel spraying programs, including highlighting needed support in delivery, funding, community outreach and other key areas.

TECHNICAL PARTNERS CAN:
• Develop an IRS Statement of Guidance that will guide the implementation of IRS programs.

COALITIONS (E.G. RBM, CAMA) CAN:
• Enhance corporate engagement on IRS programs through increased advocacy and by convening representatives across sectors for partnership development.
• Work with the government in removing taxes and tariffs and rolling back import barriers on malaria products.
Indoor residual spraying (IRS) is one of the primary malaria vector control interventions. In recent years, countries have begun implementing and expanding IRS efforts in conjunction with long-lasting insecticide net (LLIN) distribution. This integrated vector control methodology, when managed correctly, can be highly effective at limiting interactions between humans and malaria vectors. Several countries in sub-Saharan Africa have added IRS to their comprehensive malaria control plan in line with the Global Malaria Action Plan launched by the World Health Organization (WHO) and Roll Back Malaria (RBM) Partnership. In 2010, IRS protected 185 million people (6 percent of the global population at risk). IRS investments are increasing globally but the intervention is still often underutilized in regions including West Africa.

Many successful IRS programs have been initiated, funded and managed by the private sector, most frequently in the extractive and agricultural industries and often in partnership with National Malaria Control Programs (NMCPs). Companies such as AngloGold Ashanti, Rio Tinto and Freeport McMoRan are exercising leadership in IRS programming, ensuring that their workforces and the surrounding communities are protected from malaria through integrated and comprehensive programs.

“Private Sector Opportunities in IRS and Malaria Control in West Africa” brought together 60 participants including senior corporate executives and corporate public health managers from the mining, pharmaceutical, energy, technical organizations, agriculture and food and beverage industries operating in West Africa, NMCP Managers from 11 countries, WHO representatives and leading researchers from the region.

The workshop agenda covered the following themes:

- IRS Basics: How and Why your Company should Implement an IRS Program
- Partnerships that Work: Models for Successful Public and Private Sector Collaboration for IRS
- Addressing the Challenge of Resistance Management
- Financing and Evaluating a Corporate IRS Program
- Research Updates on IRS
- Country-focused Roundtables

“This event] has helped me meet and network with insecticide companies and we have agreed to conduct a pilot study in one district in my country funded by the company”

- Balla Kandeh, Gambia NMCP
Malaria is highly endemic in West Africa (see figure 1). According to the WHO, in all of West Africa, only Cape Verde has reduced malaria case incidence by more than 75 percent between 2000 and 2011, putting the country in a position to begin reducing the incidence of infection to zero\(^2\). All other countries in the region have high malaria transmission rates and the focus remains on reducing disease burden to a level at which it is no longer a public health concern.

Endemic countries can make considerable advances in malaria control by scaling up existing and appropriate interventions such as IRS for all populations at risk and sustaining these programs over time\(^2\). Currently the President’s Malaria Initiative (PMI)-financed and Abt Associates-implemented Africa IRS (AIRS) program is active in Senegal, Mali, Liberia, Burkina Faso, Ghana, Benin and Nigeria. AIRS pilots local IRS campaigns in partnership with country governments to build capacity for IRS implementation. However, countries have not yet been able to spread these campaigns for universal coverage under their NMCPs.

IRS has been largely responsible for the success of malaria elimination programs (notably in Europe, Asia and the Americas from the 1940s to the 1980s\(^3\)), but it requires a long-term commitment without which any gains can quickly be lost. Research shows that recent malaria resurgence in Africa and Latin America appears to be strongly correlated with the cessation of IRS programs and the relaxation of control over IRS activities. For example, in Zanzibar, IRS helped reduce malaria prevalence from 76 percent in 1957 to less than 5 percent in 1967. However, the program was suspended and by 1973 prevalence had returned to 32 percent and to over 60 percent by 1983\(^3\).

The number of people protected by IRS in the WHO Africa region increased from 10 million in 2005 to 78 million in 2010. We cannot let these gains slip away, at country or regional levels. It is vital that IRS is integrated and managed as complementary to other malaria control methods, such as
LLIN distribution and use. According to the RBM WARN report, 2008 IRS campaigns in Nigeria have been carried out when the funds were available, rather than in the context of broader strategic interventions. As a result, IRS programs may not be leveraged for maximum effect, and gains may be at risk over time.

 Challenges NMCPs face in implementing IRS include:

- Inadequate appropriate storage facilities for insecticides and equipment
- Inadequate spraying equipment for IRS
- Low capacity for IRS implementation within countries in the West African region
- Inadequate awareness about IRS strategy within communities
- Inadequate community involvement in the planning process

The private sector has an important role to play in reducing the malaria disease burden in West Africa through IRS. Companies can protect their workers and communities by developing local IRS programs, and can leverage corporate strengths including logistics, distribution and communication to maximize the effectiveness of national programs and strategies.

Effective use of IRS requires national program capacity, structures and systems. Together the public and private sector can continue to develop IRS best practices and strengthen IRS capacity.

**WHAT IS IRS?**

*Indoor residual spraying (IRS) is the process of spraying the inside wall surfaces of dwellings with an insecticide to kill mosquitoes that spread malaria. Mosquitoes are killed or repelled by the spray, preventing disease transmission as insecticides reduce contact between humans and mosquitoes. IRS results in the rapid reduction of a mosquito’s ability to transmit malaria and, subsequently, a reduction in malaria incidence. When more than 80 percent of structures in a defined area are sprayed with an effective insecticide, IRS is the most effective method for reducing malaria transmission.*
There is a sound business case in West Africa for corporate IRS programs as part of a comprehensive malaria control strategy. Developing and executing IRS requires careful planning, adequate resources and ongoing monitoring and evaluation. To ensure sustained commitment, company stakeholders at all levels of the organization must understand why this intervention is so essential. Best practice presentations from two mining companies—AngloGold Ashanti, Rio Tinto—and from HD Hudson Manufacturing Company offered insights into the business case and return on investment, as well as the most effective ways to execute a corporate IRS program.

HD Hudson Manufacturing Company: Manuel Lluberas, Executive Director for Public Health
AngloGold Ashanti: Frank Amoyaw, Deputy Program Director, Malaria Control
Rio Tinto Simfer SA: Cheick Ousmane Touré, Health and Safety Advisor

**KEY TAKEAWAYS**

- IRS in West Africa is a good corporate and social investment, reducing medical costs and absenteeism and increasing productive output. It produces a healthy workforce and increases employee satisfaction and community engagement.

- IRS programs are a win-win situation for the implementing company, stakeholders and the community. Corporate IRS programs provide employment, economic empowerment and capacity-building for local communities, creating a positive and stable social environment that supports a company’s local operations and relationships.

“Implementing an IRS campaign is like being pregnant: it is not possible to be mostly or partly pregnant. Once pregnant, you’re in for the long haul”

- Manuel Lluberas, HD Hudson Manufacturing Company

- IRS saves vulnerable lives that would have potentially been lost to a disease that is preventable, curable and easy to manage. There is no replacement for life and that alone is significant reasoning to become involved in a program that truly saves lives.

- There is abundant evidence that IRS is very effective in areas where malaria transmission is year-round as well as seasonal. In many areas, IRS has proved crucial for the reduction or even elimination of malaria.
• An IRS campaign is a full commitment. An efficient IRS program is:
  — TOTAL: all dwellings (>85 percent) are sprayed
  — COMPLETE: covering all sprayable surfaces
  — SUFFICIENT: the selected insecticide must be applied uniformly over all surfaces
  — TIMED: residual effect should last through the malaria transmission period

• The basic entomological targets of mosquito populations targeted by IRS are mosquitoes that:
  — Rest and/or bite indoors
  — Are susceptible to the selected insecticide

• A successful IRS campaign requires political will, awareness efforts to build acceptance and endorsement from organizational and community stakeholders, as well as well trained and motivated spray teams.

**RECOMMENDATIONS**

• Companies should work with governments to align corporate IRS programs with national malaria control strategies to ensure full support from the national government and NMCP.

• Technical partners like the World Health Organization (WHO) should develop an IRS Statement of Guidance that will guide the implementation of IRS programs.

• The NMCP managers of each country should create IRS awareness in schools. Malaria is the leading cause of school absenteeism, so educators and administration are likely to value malaria education. Schools offer an efficient, cost-effective entry-point to reach local community members. Students should be provided with educational materials on malaria prevention methods and IRS that they can share with their families.

• Education and awareness is a critical component of any IRS program. Residents of targeted areas need to be educated on IRS—how it contributes to reduction in malaria prevalence and what actions they can take to protect themselves and their families—including cooperation with spray teams, and other interventions (e.g. insecticide-treated bed nets) that must be used in parallel with IRS activities.

• Women should be involved in IRS program implementation, especially as educators at the community and household levels.
MODELS FOR SUCCESSFUL PARTNERSHIPS

“Partnerships are necessary to achieve success in the fight against malaria; no one stakeholder can do it alone”

- Jacob Williams, Director, Integrated Vector Management, RTI International

Successful public-private partnerships can advance IRS programs in West Africa. The private and public sectors have unique strengths and by cooperating, partners can cost-effectively bolster IRS programs for maximum impact.

Chirano Gold Mines Ghana: Joseph Stiles-Ocran, Medical Entomologist and Consultant, Malaria Control Program

Government of Ghana, National Malaria Control Program: Godson Kofi Osae, Monitoring and Evaluation Focal Point

RTI International: Jacob Williams, Director, Integrated Vector Management

Moderated by GBCHealth Kenya: Neeta Bhandari, Regional Director

KEY TAKEAWAYS

• Governments recognize the key assets the private sector can bring to the malaria fight, including human capital, geographical access, technical and logistics capacity, job creation potential and a shared vision for a healthy population. NMCPs can reach their goals faster by engaging private sector support in the development and implementation of programs.

• The public sector encounters partnership challenges including instructional rivalry, bureaucracy and partners who sometimes fold up operations, ending IRS activities prematurely.

Cross-cutting lessons on partnerships include:

• Identify shared objectives and larger goals, including organizational priorities.

• Ensure combined output that’s greater than the sum of individual partner contributions; partnerships should add value for all, through economies of scale and other synergies.

• Anticipate and overcome obstacles early in the partnership by proactively developing communication and mediation systems and agreeing on desired outcomes and partner roles.

• Enable integration based on agreed criteria and common goals; allow flexibility, tailored partnerships and mechanisms to meet needs at different levels.
• Recognize the autonomy of each individual entity: a partnership does not mean the surrender of sovereignty
• Appreciate and articulate the contribution of all partners. Contributions must be seen as complementary, and successes should be celebrated!

RECOMMENDATIONS
• Companies should reach out to NMCPs to understand priorities and gaps where they can assist and keep NMCPs informed of progress in corporate malaria programs.
• Governments have an opportunity to increase corporate engagement in IRS by helping develop and promote the business case and identifying specific opportunities beyond spraying (see Opportunities for Private Sector Engagement above).
• When developing new partnerships, all stakeholders should keep abreast of vector control trends and recognize related challenges, including changes in the eco-epidemiology/ecosystem, increasing insecticide resistance and the slow market entry of new tools.
• Organizations such as RBM and GBCHealth can enhance corporate engagement on IRS programs through increased advocacy.

EXAMPLES OF SUCCESSFUL PUBLIC PRIVATE-PARTNERSHIPS (PPPs):

Government/NMCP/NGOs/Private Companies
• Guinea NMCP/RTI/Rio Tinto. Visit the link here for more information

PMI/Government/NMCP/Academic Institute/Company/NGO
• PMI/Ghana Health Service/Ghana NMCP/Noguchi Memorial Institute for Medical Research/Anglo Gold Ashanti/RTI. Visit the link here for more information

NGO/Company
• IVCC/Bayer. Visit the link here for more information

Company/Academic Institution
• Syngenta/London School of Hygiene and Tropical Medicine. Learn more here.

Opportunities for private sector engagement in priority activities for IRS:

• Communication and public education/mobilization
• Data management
• Disease epidemiology and pesticide management
• Financial management
• Human resource development
• Proposal development
• Logistics and procurement/infrastructure development
• Policy strategy development/enhancement program planning and management
• Monitoring and evaluation
• Vector ecology and entomology
Insecticide resistance poses a significant threat to IRS programs. Over time, insecticides lose effectiveness as mosquito populations metabolically and genetically adapt, limiting available IRS options and driving up costs. Making smart decisions to deal with resistance management requires thought, planning and the right knowledge. While insecticide resistance is a major challenge to IRS, there are new innovative approaches to address it within the context of a corporate IRS program.

Centre de Recherche Entomologique de Cotonou: Martin Akogbeto, Director
Bayer Environmental Science: Adjo Mfodwo, Regional Manager, West Africa
Arysta Life Science: Rose Peter, Associate, Public Health Strategic Partnerships
Moderated by GBCHealth’s Corporate Alliance on Malaria for Africa: Ochuko Keyamo, Manager

KEY TAKEAWAYS

• Rapidly increasing insecticide resistance threatens to undermine recent gains against malaria in Africa. Resistance development reduces effectiveness of both IRS and LLINs and complicates the process of choosing an insecticide for vector control.

• The key causes of insecticide resistance are mosquito evolution, increased tolerance and poor management of available tools (continued, frequent use of a single insecticide or closely related insecticides, the use of application rates that are below or above those recommended on the label, etc.). Agricultural spraying of insecticides is often a contributor to resistance in mosquitoes.

• Factors that reduce the efficiency of insecticides and IRS programs include:
  — High precipitation that causes solid particles to form from the insecticides. This can be avoided by storing the insecticide in a secure, dry, cool (covered) storage and by constantly shaking when in use.
  — Social and cultural realities such as community knowledge and beliefs, perception and low acceptance of the intervention. Community communication and education initiatives, including partnership with community leaders, church representatives and other influencers, are key to ensuring IRS program success.

• Larviciding—the use of insecticide to interrupt mosquito larvae development—is a “new old” solution that has been reconfirmed to be effective. A program can get better results by eliminating 90 percent of mosquitoes while they are larvae than 10 percent that grow to become flying mosquitoes. Well-concentrated larviciding efforts during the cold/dry seasons can make a big difference.

• There is an urgent need to develop new insecticide active ingredients and delivery systems (such as encapsulation). There are only four...
classes of insecticides currently available (pyrethroids, carbamates, organochlorides, organophosphates); additional insecticide types are needed. Encapsulation—a method of wrapping a core substance (e.g. insecticides) in walls formed by a covering substance—allows controlled delivery to targets with greater specificity. An encapsulated form of an insecticide is efficacious at lower doses than the conventional formulation, which results in lower environmental burden.

- The African Network for Vector Resistance (ANVR), managed by WHO/AFRO, is available to help countries that need resistance management support.

“Taking steps to prevent the development of resistance increases the cost of IRS programs BUT addressing resistance after it has developed is even more costly.”
- Adjo Mfodwo, Bayer Environmental Science

Integrated Vector Management Principles

Integrated vector management (IVM) is a rational decision-making process for the optimal use of resources for vector control. IVM includes LLIN, IRS, larviciding, repellents and environmental management. The principles of IVM are:

- Strategic and focused treatments
- Environmental control of breeding sites (e.g. get rid of puddles)
- Disease management
- Reproduction interference—any kind of interaction that occurs between different species during the process of mating that adversely affects the fitness of at least one of the species involved. Some specific plants, bacteria and genetic control can interfere with mosquitoes in all stages of reproduction.
- Modification of vectoral capacity—strategies that result in significant reductions in the capacity of a mosquito population to transmit disease. One example is to shorten the life span of adult mosquitoes.

Strategies to overcome or mitigate the development of resistance:

- Before ordering insecticides, establish varying mosquito sensitivity to insecticides at each location
- Avoid single insecticide approaches: rotate products, use mosaic spraying and consider combining insecticides
- Improve the skills of spray operators to make sure mosquitoes are being killed and malaria cases are decreasing
- Diligently implement a monitoring and evaluation (M&E) program to track the results of spray rounds
- Ensure good quality control of the spray program and products
- Collaborate with and support local research institutions
RECOMMENDATIONS

• West Africa is the region with the highest insecticide resistance in Africa; each country must initiate a vector control strategy that incorporates vector resistance management.

• Governments must monitor the evolution of vector resistance; they should work with companies and partners to expand and consolidate existing networks of surveillance sites.

• Government and companies should create an environment that encourages innovation and the development of ethical research-based products (Use of the WHO Pesticide Evaluation Scheme is recommended.)

• Give priority to the use of non-pyrethroids (e.g. bendiocarb or pirimiphos methyl) for IRS in West Africa and reserve pyrethroids for LLINs in areas of insecticide resistance.

• Given the significant cost of “second-line” insecticides for resistant areas, companies and governments should coordinate to pool insecticide orders. Insecticide companies can provide better discounts when order volume and/or predictability is increased.

• Companies and research organizations should collaborate to develop more effective insecticide formulations for IRS. Companies should also partner with research organizations to study the possibility of insecticide combinations for LLINs and to develop the technology of big molecule insecticides to increase IRS efficacy on mud walls.
IRS program costs can be maximized with partner collaboration that leverages unique strengths and contributions. When creating an IRS program budget, it is important to localize to the context, including key decisions about the program size, appropriate insecticides (given resistance patterns) and potential partner contributions.

Abt Associates: Peter Mumba, Africa IRS Chief of Party for Ghana

President’s Malaria Initiative: Philip Ricks, Resident Malaria Advisor, Ghana

Moderated by HD Hudson Manufacturing Company: Manuel Lluberas, Executive Director for Public Health

**KEY TAKEAWAYS**

- Program costs vary significantly based on the frequency of insecticide application (number of spray rounds per year), the type of insecticide used, the size of the program, the number of personnel and management structures (e.g. ratio of spray staff to team leaders to supervisors), and population density (the distance between structures to be sprayed).

- The insecticide is often the largest share of the budget. While funding for IRS has increased over the years and IRS will continue to be seen as a valuable investment for donors, insecticide resistance is driving up the costs of IRS programs. In many cases, due to rising insecticide resistance, the inexpensive pyrethroids have been rotated to the more expensive carbamate or organophosphate insecticides. Further, when dealing with resistance, multiple spray rounds per year may be required.

- The cost per person protected is lower in larger spray programs (over 150,000 structures sprayed) than in smaller ones, due to economies of scale (as studied by PMI). Costs range from approximately $2 per person in large programs to almost $7 per person in small programs.

**RECOMMENDATIONS**

- When budgeting for an IRS program, companies must account for all technical areas, including logistics, procurement of supplies, technical staff trainings and monitoring and evaluation.

- Leverage co-financing: NMCPs and companies do not need to bear the whole cost of IRS programs. The costs may be shared with other ministerial departments or programs, as malaria control is an issue of national importance.

- RBM should work with the government in removing taxes and tariffs and rolling back import barriers on malaria products.
Spotlight: Africa IRS (AIRS) Program

- AIRS manages IRS operations and logistics in 13 endemic countries in Africa and conducts entomological monitoring in Burundi and the Democratic Republic of Congo.

- A guiding principle of the project is to develop local capacity to lead IRS. In every country where AIRS sprays, the project assesses the capacity of the Ministry of Health and the NMCP to implement IRS without foreign technical assistance.

- AIRS is funded by PMI and implemented by Abt Associates.

- Find out more at www.africairs.net.

Spotlight on the President’s Malaria Initiative

- Launched in 2005, the President’s Malaria Initiative (PMI) began as a five-year, $1.2 billion expansion of U.S. Government resources to reduce the intolerable burden of malaria and help relieve poverty on the African continent.

- The initiative expanded in 2008 to reduce malaria morbidity and mortality by 70 percent in 19 high burden countries, compared to the 2004 baseline, with 30 million people protected by IRS in 2012.

- PMI provides significant commodity support and data-driven IRS program support with a focus on capacity building.

- Approximately 25 percent of annual country budgets have supported IRS program activities, with a recent expansion of PMI funding for IRS from $75 million to $90 million.

- The Lantos-Hyde Act of 2008 extended PMI’s original scope and funding for an additional five years (FYs 2009–2013)

A monitoring and evaluation (M&E) plan is necessary to track and demonstrate IRS program results and is key to articulating the business case within a company or partnership. When creating an M&E plan for an IRS program, it is important to define clear objectives and commit to robust, comprehensive surveillance and standard procedures.

MosquitoZone: Cole Church, Program Manager, Vector-borne Disease Prevention

**KEY TAKEAWAYS**

- When data is collected frequently, monitoring is consistent and data is tracked well. M&E can provide feedback on a successful program or can serve as an early warning of a failing intervention, allowing for real-time course correction.

- Measures of IRS success include:
  - Outcome measurements such as the number of illnesses/deaths prevented and the reduction in anemia
  - Process indicators such as intervention processes, blood parasitemia and economic benefits
  - IRS program indicators including the number of structures sprayed and the cost per person protected by IRS
  - Entomological indicators such as reductions in the vector population

- Indicators of interest may differ based on program objectives but should align with national goals. For example, private industry may be particularly interested in measures such as decreased sick days, while NGOs may be aiming for an increase in school attendance for children. All partners should clarify objectives early in program development and incorporate national indicators and goals into M&E systems.

**Private-Public Opportunities for Collaboration Around M&E**

- Sharing resources (finances, facilities) and expertise
- Standardizing malaria control measures and resourcing across the country
- Coordinating and standardizing monitoring, evaluation and planning of IRS

**RECOMMENDATIONS**

- Before starting a corporate IRS program, companies must collect baseline data. In order to provide a comprehensive context for M&E, data collection should occur during both low and high transmission seasons, and include vector identification and an estimation of vector population dynamics.
Companies should adapt M&E approaches to the program’s geographic context:

- In moderate to high malaria transmission areas, where there is frequently a low per capita healthcare expenditure and the population has poor access to medical care, M&E should focus on reductions in mortality and morbidity.

- In low malaria transmission areas where there is increased access to medical care and diagnostic tests and data collection allows identification of geographic and seasonal transmission trends, M&E should focus on hotspots, rapid response, entomological vigilance (such as insecticide resistance) and tracing cases to specific geographic areas.

“Our company is already planning to do a case study on having another IRS team in place and the information received from this workshop on budgeting will be used. Statistical data will be used in our reports.”

- Rio Tinto Simandou
IRS RESEARCH UPDATES

IRS is a highly effective means of malaria control but remains underutilized and can be logistically complex. The planning and implementation of IRS program must be based upon epidemiological analysis and entomological surveys for specific localities or countries. All stakeholders involved in malaria control need to be equipped with the most current knowledge to enable smart decision making around IRS program.

*Nigerian Institute of Medical Research: Samson Awolola, Head of Department, Public Health Division*

*Noguchi Memorial Institute for Medical Research: Samuel Dadzie, Research Fellow*

*Noguchi Memorial Institute for Medical Research: Benjamin Abuaku, Research Fellow*

*Université Cheikh Anta Diop, Dakar, Senegal: Ousmane Faye, Professor, Medical Entomologist, Laboratoire d’Ecologie Vectorielle et Parasitaire*

PRESENTED STUDIES & RESOURCES

- Baseline Information for the Implementation of Indoor Residual Spraying: The Nigeria Experience. For more information visit this link here.

- Entomological and Epidemiological Monitoring of Indoor Residual Spraying Program in Northern Ghana. For more information click here.

- Impacts of Indoor Residual Spraying in Senegal (French article). Visit here for more information.

RECOMMENDATIONS

- Government and the private sector should collaborate on research activities to develop new vector control products or approaches and on the management of insecticide resistance.

- Governments should develop a strategy to build regional and national entomological capacity in collaboration with the private sector.

- Companies can call upon in-country university experts for assistance. The Nigerian Institute of Medical Research, Noguchi Memorial Institute for Medical Research and Université Cheikh Anta Diop, Dakar, Senegal are all open to consultation.

“Create an effective data management of all current IRS programs; communicate to employees on the benefits of IRS; implement continual surveillance of the ongoing IRS program”

- Tullow Oil, Ghana
COUNTRY BREAKFAST SESSION

These sessions provided a platform for NMCP representatives to discuss country-specific best practices, lessons learned and challenges and opportunities for private sector engagement on IRS and malaria control.

KEY TAKEAWAYS

- The private sector must seek more financial and political commitment from the government.
- IRS remains under-implemented in West African countries due to perceived high costs.
- The malaria control challenges faced most by West African countries include: country size (e.g. large geographic area to cover), lack of adequate resources (e.g. funding and human capital), insecticide resistance that increases program costs and lack of knowledge on how to engage the private sector.

- It is important for governments to present a business case to companies for private sector engagement.
- Companies can engage in IRS and malaria control gradually but should do so in alignment with national strategies.

RECOMMENDATIONS

- Governments can create an oversight committee that harmonizes all malaria control and IRS activities in the country, across stakeholders. A best-practice example is that of the Malaria Vector Control Oversight Committee in Ghana, which reaches out to stakeholders, providing guidance, coordination and support.
- Ministries of Health and NMCPs must allocate resources to support IRS management positions at both district and national levels in order to promote skills transfer and program sustainability.
CONCLUSION

The 2013 Private Sector Opportunities in IRS and Malaria Control in West Africa workshop demonstrated the value of IRS as part of a comprehensive malaria control approach and the importance of business involvement in IRS programming. Partnership has been critical to past successes in IRS and must continue to sustain recent gains. More importantly, opportunities abound for new and deeper partnerships and corporate contributions. GBCHealth’s CAMA and RBM continue to be at the forefront of collaborative malaria control efforts and have called on the private sector and the public sector to intensify the fight against malaria. Building national capacity in key areas such as entomology, research and program management will be critical to ensure that countries are firmly in the driver’s seat.

The workshop provided a unique platform for leaders within the public and private sectors to convene and outline necessary actions for meaningful impact on malaria control. Participants agreed on the need to intensify political commitment, financial resources and research and development to achieve the 2015 targets. Several companies made commitments to begin malaria control collaboration with government NMCPs, NGOs, council chiefs and other stakeholders and to join with private sector peers in supporting the CAMA partnership.

Defeating malaria is possible if the West African community stays together and stays focused, looking past perceived differences to focus on shared goals.

WORK CITED


APPENDIX I
AGENDA

West Africa Malaria Workshop:
Private Sector Opportunities in IRS and Malaria Control

September 12th-13th, 2013
Fiesta Royale Hotel, Accra, Ghana

WOKSHOP OBJECTIVES:
• Promote and increase private sector engagement and investment in workplace and community IRS and malaria control activities in West Africa
• Demonstrate the business case for IRS and malaria control in West Africa
• Highlight best-in-class private sector driven IRS programs
• Share updates on IRS and resistance management trends from international and country level experts
• Establish connections between key malaria control stakeholders, including National Malaria Control Program (NMCP) officials, RBM/WHO representatives, technical and academic experts and the corporate sector

AGENDA

SEPTEMBER 11th, 2013
7:00-8:00 PM   Registration and Welcome Cocktail
8:00 PM   Dinner on your own

SEPTEMBER 12th, 2013
8:30-9:00 AM   Registration and Breakfast
9:00-9:30 AM   WELCOME REMARKS
• Naa Korkor Allotey, Program Officer, National Malaria Control Program, Government of Ghana presenting remarks from Dr. Constance Bart-
Plange, Director, National Malaria Control Program, Government of Ghana

- Pam Bolton, Vice President, Membership and Advisory Services, GBHealth New York

9:30-10:00 AM OPENING PRESENTATION: MALARIA CONTROL IN THE WEST AFRICAN REGION—OVERVIEW AND UPDATES

- Jan van Erps, Coordinator Supply Chain Support, RBM Secretariat, World Health Organization

10:00-10:15 AM TEA BREAK

10:15-11:30 AM IRS BASICS: HOW AND WHY YOUR COMPANY SHOULD IMPLEMENT AN IRS PROGRAM
Session Objectives: Demonstrate the business case for implementing an IRS program within a company; Share the “nuts and bolts” of IRS program implementation.

- Manuel Lluberas, Executive Director for Public Health, HD Hudson Manufacturing Company (Moderator)
- Frank Amoyaw, Deputy Program Director, Malaria Control, AngloGold Ashanti
- Cheick Ousmane Touré, Health and Safety Advisor, Rio Tinto Simfer SA

11:30-12:45 PM PARTNERSHIPS THAT WORK: MODELS FOR SUCCESSFUL PUBLIC AND PRIVATE SECTOR COLLABORATION FOR IRS
Session Objectives: Showcase successful government-private sector partnerships that advance IRS programs within the region; Highlight the ways in which organizations can create, nurture and sustain cross-sectoral collaborations

- Neeta Bhandari, Regional Director, GBHealth Kenya (Moderator)
- Joseph Stiles-Ocran, Medical Entomologist and
Consultant, Malaria Control Program, Chirano Gold Mines Ghana

• **Godson Kofi Osae**, Monitoring and Evaluation Focal Point, National Malaria Control Program, Government of Ghana

• **Jacob Williams**, Director, Integrated Vector Management, RTI International

12:45-2:00 PM  NETWORKING LUNCH

2:00-3:15 PM  ADDRESSING THE CHALLENGE OF RESISTANCE MANAGEMENT
Session Objectives: Discuss innovative approaches to address the challenges of insecticide resistance within the context of a corporate IRS program; Equip corporate managers with the knowledge to enable smart decision-making around resistance management

• **Ochuko Keyamo**, Manager, Corporate Alliance on Malaria in Africa, GBCHHealth New York (Moderator)

• **Martin Akogbeto**, Director, Centre de Recherche Entomologique de Cotonou

• **Mark Edwards**, Head of Product Development and Regulatory Affairs, Bayer

• **Rose Peter**, Associate, Public Health Strategic Partnerships, Arysta LifeScience

3:15-4:00 PM  TEA BREAK

4:00-5:00 PM  INTERACTIVE EXHIBIT: DEMONSTRATION OF IRS APPROACHES BY ANGLOGOLD ASHANTI
Experience a mini exhibition displaying activities that normally constitute an IRS program (e.g. IEC materials, M&E, spray logistics, spray operations, entomology lab)

5:00-5:15 PM  DAY 1 SUMMARY

• **Shuma Panse**, Director, Membership and Advisory Services, GBCHHealth New York
5:15-5:30 PM  GROUP PHOTO

6:00-8:00 PM  NETWORKING DINNER

SEPTEMBER 13th, 2013

8:00-9:00 AM  COUNTRY-FOCUSED BREAKFASTS
Meet and engage NMCP managers, who will lead informal discussions on country-specific malaria and IRS issues and high-impact partnership opportunities for private sector

9:00-9:15 AM  DAY 1 SUMMARY AND DAY 2 OVERVIEW
• Ochuko Keyamo, Malaria Manager, Corporate Alliance on Malaria in Africa (CAMA), GBCHealth New York

9:15-10:30 AM  FINANCING AND EVALUATING A CORPORATE IRS PROGRAM
Session Objectives: Discuss monitoring and evaluation strategies for an IRS program; Discuss funding trends and challenges; Discuss cost-effectiveness of IRS
• Manuel Lluberas, Executive Director for Public Health, HD Hudson Manufacturing Company (Moderator)
• Peter Mumba, Africa IRS Chief-of-Party for Ghana, Abt Associates
• Cole Church, Project Manager, Vector-borne Disease Prevention, MosquitoZone International
• Phillip Ricks, CDC Resident Malaria Advisor

10:30-11:00 AM  TEA BREAK

11:00-12:15 PM  RESEARCH UPDATES ON IRS
Session Objectives: Provide a platform for regional research institutes to share current areas of work and share opportunities for private sector partnerships
• Samson Awolola, Head of Department, Public Health Division, Nigerian Institute of Medical Research (Moderator)
• **Benjamin Abuaku**, Research Fellow, Noguchi Memorial Institute for Medical Research

• **Samuel Dadzie**, Research Fellow, Noguchi Memorial Institute for Medical Research

• **Martin Akogbeto**, Director, Centre de Recherche Entomologique de Cotonou

• **Ousmane Faye**, Professor, Medical Entomologist, Laboratoire d’Ecologie Vectorielle et Parasitaire, Université Cheikh Anta Diop (UCAD), Dakar, Senegal

12:15-12:30 PM  WRAP-UP AND SUMMARY OF WORKSHOP

• **Neeta Bhandari**, Regional Director, GBCHealth Kenya

12:30-14:00 PM  NETWORKING LUNCH

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APPENDIX II
WORKSHOP PARTICIPANTS

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Chirano Gold Mines
CIELS
Dow Chemical Company
Drugmart Ltd
FHI 360
GBCH Health
General Electric Company (GE)
Golden Exotic
Harvestfield NG
Health Authority - Abu Dhabi
HEINEKEN
Hudson Pumps & Equipment
Jhpiego
Lafarge
MosquitoZone International
National Malaria Control Program - Benin
National Malaria Control Program - Burkina
Faso
National Malaria Control Program - Côte
d’Ivoire
National Malaria Control Program - Gambia
National Malaria Control Program - Ghana
National Malaria Control Program - Mali
National Malaria Control Program - Niger
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National Malaria Control Program - Senegal
National Malaria Control Program - Sierra
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Nigerian Institute of Medical Research
Noguchi Memorial Institute of Medical
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Palutech Releve Company Benin
PMI/CDC Ghana
Rio Tinto
Roll Back Malaria Partnership
RTI International
Rural Builders Organisation
Santé En Entreprise
Saphyto
SC Johnson
Speak Up Africa
Syngenta Crop Protection
Tullow Oil plc
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We would like to acknowledge the following GBCHHealth staff who contributed to the writing and production of this report.

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