Community based Indoor Residual Spraying in Tanzania: Findings and recommendations from pilot testing

9\textsuperscript{th} annual VCWG Meeting
19\textsuperscript{th} - 21\textsuperscript{st}, Feb 2014
Geneva
J Mutagahywa, S. Lalji, M. Lifwatila, L. Matonya, M. Lugera, G. Ndakidemi, S. Magesa
Introduction

• With PMI support, IRS started in Muleba and Karagwe districts in 2007 and 2008 respectively

• In 2009, IRS expanded to all 7 districts of Kagera

• In 2010, it expanded to Mwanza and Mara regions (6 and 5 districts, respectively)

• By 2010, it covered 18 districts in the Lake Zone

• Different modes of IRS implementation have been used: highly centralized, partially decentralized and community-based IRS
IRS scale up in the lake zone 2007 - 2010
Highly centralized IRS implementation, 2007 - 2009

From 2007 to 2009, IRS was organized at highly centralized camps with the following features:

• Large camps accommodating > 100 people

• Staff provided with food and sleeping places

• Served large spray areas with ≥ 20,000 spray-able structures

• Large storage facilities to accommodate bulky insecticides, PPE and other commodities
Highly centralized IRS implementation, 2007 - 2009

• Team leaders composed of site managers assisted by supervisors and store assistants

• Transportation involved large number of trucks, 4WD vehicles and motorcycles

• Each site was equipped with truck installed with a tank and water pump for supplying water

• Remote sites were provided with temporary stocks of fuel for vehicles, motorcycles and generators
Disadvantages of highly centralized IRS sites

- Very difficult to organize and manage due to large number of people and related logistics

- Expensive in terms of accommodation, food, modality of water supply and transportation

- Difficult to manage and monitor transportation
Partial decentralization of IRS, 2010 – 2012

- Shift from large camps to medium size IRS sites
- Relatively small compared to former IRS camps, serving 5,000 – 10,000 spray-able structures
- Average of 40 spray operators per site
- No accommodation and food costs
Partial decentralization of IRS, 2010 – 2012

- Managed by site managers and team leaders (no supervisors or stores assistants)
- Transport provided to spray operators only
- Water supplied by local water vendors
- Despite change to partially decentralized approach, coverage and quality of IRS remained high
Introduction of community based IRS (CBIRS)

• Since 2012, RTI in collaboration with regional and district authorities conceived the need to further decentralize IRS

• Decentralization aimed at organizing and implementing IRS at village level, referred to as community based IRS
Objectives of CBIRS

i. Reduce costs of IRS implementation
ii. Increase level of community participation & ownership
iii. Reduce the organizational complexity of IRS
iv. Achieve acceptable level of IRS quality
v. Comply with environmental protection requirements
Main distinguishing features of CBIRS

- IRS was organized and implemented at the village level
- Construction of sub-sites
- Recruitment of sub-site supervisor for sub-sites with more than one spray team
- Recruitment of spray operators by village governments
- Recruitment of village IEC mobilizer
- Spray operators switched from using vehicles to using bicycles for transportation
- Water for spray sub-sites were supplied by the village
Schematic representation of CBIRS
Organogram for the sub site management

Standard site managed by site manager

Multiple sub-site managed by sub-site supervisor
- Team Leader
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator

Single sub-site managed by team leader
- Team Leader
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
- Spray Operator
Piloting of CBIRS

Between November and December 2013, CBIRS was piloted in collaboration with regional and district authorities

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>VILLAGE</th>
<th>STRUCTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chato</td>
<td>43</td>
<td>21,368</td>
</tr>
<tr>
<td>Geita</td>
<td>23</td>
<td>15,831</td>
</tr>
<tr>
<td>Rolya</td>
<td>09</td>
<td>6,175</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>43,374</td>
</tr>
</tbody>
</table>
Pilot Results
## How CBIRS affects costs of IRS

<table>
<thead>
<tr>
<th>SNo</th>
<th>ITEM</th>
<th>COST IN BASED IRS</th>
<th>COMMUNITY</th>
<th>COST IN CENTRALIZED IRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compensation to village IEC mobilizer (VIM)</td>
<td>3,340,000</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Compensation to Sub-site supervisor</td>
<td>4,050,000</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Compensation to Site Manager</td>
<td>1,610,000</td>
<td>1,610,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Compensation to Site IEC mobilizer (SIM)</td>
<td>1,325,000</td>
<td>13,250,000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Compensation to spray operators</td>
<td>37,790,000</td>
<td>38,636,000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Compensation to hamlet leaders</td>
<td>5,700,000</td>
<td>6,300,000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Transport cost for Site manager and sub-site supervisor</td>
<td>3,080,000</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Transport cost for SIM</td>
<td>840,000</td>
<td>840,000</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td><strong>Sub – site fabrication/site repair</strong></td>
<td><strong>17,071,400</strong></td>
<td></td>
<td><strong>60,000,000</strong></td>
</tr>
<tr>
<td>10</td>
<td>Cost of supervision vehicle</td>
<td>9,000,000</td>
<td>4,500,000</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Cost of distribution vehicle</td>
<td>9,808,000</td>
<td>6,000,000</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Cost of spray operator vehicle</td>
<td>0</td>
<td>25,000,000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>TOTAL</td>
<td>93,614,400</td>
<td>156,136,000</td>
<td></td>
</tr>
</tbody>
</table>

Difference between CBIRS and CIRS: -62,521,600
The influence of CBIRS on community participation and ownership

- Village governments were given the opportunity to recruit spray operators that the community trusted
- Village governments were more willing to accept IRS and the responsibilities pertaining to IRS operations
- Village governments supplied water which previously was paid for by donor (PMI)
Women volunteering to supply water at the sub-site of Busanda
The influence of CBIRS on community participation and ownership

• Builders/laborers for temporary sites were sourced from the community

• Locally recruited labor proved cheaper than obtaining labor through licensed contractors

• Reduced conflicts between villages and district authorities on recruitment of spray operators
The influence of CBIRS on the organizational complexity of IRS

• CBIRS was easy to organize and manage due to small size of teams (n=5-8) in villages

• Smaller stocks of insecticides and other supplies meant smaller storage facilities needed and more easily managed

• No need of escort since operational areas were well known to spray operators

• Reduced travel distance eliminated need for vehicles

• Trust of local spray operators increased cooperation from households
The influence of CBIRS on the organizational complexity of IRS

• Increased demand on logistic teams to distribute insecticides and other supplies to many sub-sites

• The wide scattering of operational areas at one time overstretched the district supervision team

• Increased number of staff eg Village IEC Mobilizer and Sub Site Supervisor
The influence of CBIRS on the quality of IRS

- Spray coverage was high (87 – 99%)

- The quality was acceptable using the following indicators:
  - Preparedness of houses to be sprayed: > 89% of households were well prepared for spraying
  - Coverage of rooms in a sprayed structure: > 90% of households had all the rooms sprayed
  - Instructions to the household members: 92% of household respondents received correct instructions post-spray
  - Good opinion of IRS among household members: > 86% of household respondents had a favorable opinion of IRS delivery as compared to last round
The influence of CBIRS on compliance of environmental protection requirements

• Building of sub-sites was carried out taking into account of environmental compliance (*had washing bay lined with plastic sheeting and soak pit to treat generated effluent wastes*)

• The community were able to provide storage facilities that were ideal;
  ➢ Were with strong doors and windows
  ➢ Good light and ventilation
  ➢ Located where no threat for interacting with non authorized people
• The sub-site at Nyabilezi in Chato district fenced with mats
The sub-site at Msasa in Geita district fenced with poles
Waste effluent disposal structure of a standard IRS site
Conclusion and recommendations

• Successful piloting of CBIRS indicates it is replicable in other districts with the following modifications:
  – Use of Village IEC Mobilizer adds unnecessary costs since their tasks can easily be carried out by hamlet leaders
  – Where the sub-site accommodates more than one team, one competent team leader can serve as the sub-site leader and be motivated to take on added responsibilities. This will reduce compensation costs and transport costs incurred by sub-site supervisors
Conclusion and recommendations

• The construction of sub-site effluent disposal structures should be further simplified based on recommendations of the senior environmental compliance expert:

  – use one soak pit instead of two

  – use small water containers where the number of spray operators is small e.g. 5 operators may need 200L capacity instead of 500L capacity
Conclusion and recommendations

- In Community based IRS, team leaders have extended jurisdiction of supervising many things like environmental compliance, supervising quality and quantity of IRS and they work under minimum supervision, thus their training should be updated to cope with current tasks.

- Develop user friendly documents and plans to guide the implementation of community based IRS at all levels.

- CBIRS to be rolled out to full scale in districts that piloted the approach and other districts as per stratification.
THANKS FOR YOUR ATTENTION