

United Republic of Tanzania



Ministry of Health

Community-based biolarviciding in different epidemiological strata/councils in Tanzanian TEMT Team



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Contents

1. What is biolarviciding
2. Setup of biolarviciding intervention
3. Status of biolarviciding intervention
4. Key results of biolarviciding intervention
5. Costing updates of biolarviciding intervention
6. Lessons learned and next steps

What is biolarviciding?

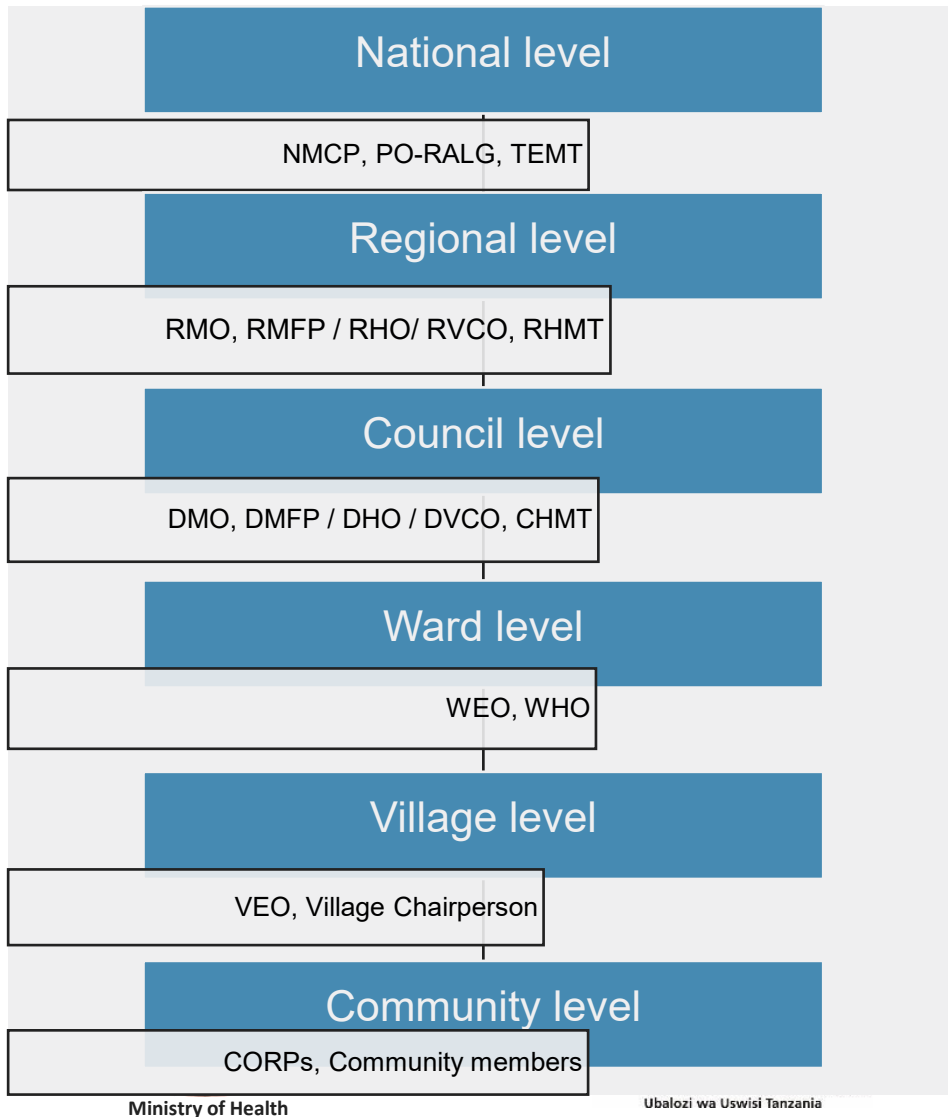
Biolarviciding

- Is the regular application of biological insecticides onto water bodies (breeding habitats) to kill mosquito larvae
- Is one of the approaches of larval source management



Setup of biolarviciding intervention

Organizational structure



Selection of councils

Three (3) councils - Criteria

- Representation of different malaria risk strata; low; moderate; high
- Representation of both rural and urban settings
- Councils with high heterogeneity of malaria risk (within its wards)

Councils	Lushoto DC	Tanga CC	Handeni DC
Risk Strata	Low (Rural)	Moderate (Urban)	High (Rural)
Number of villages/streets	89	181	91



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Setup of biolarviciding intervention

Types of biolarvicide

- Produced in-country (TBPL)
- Using both Bti and Bs
- Larvae mortality at 24-48 hours
 - Bti: > 91%; Bs: > 96%
- Highly selective (target only mosquito larvae)
- Safe to humans, animals and the environment



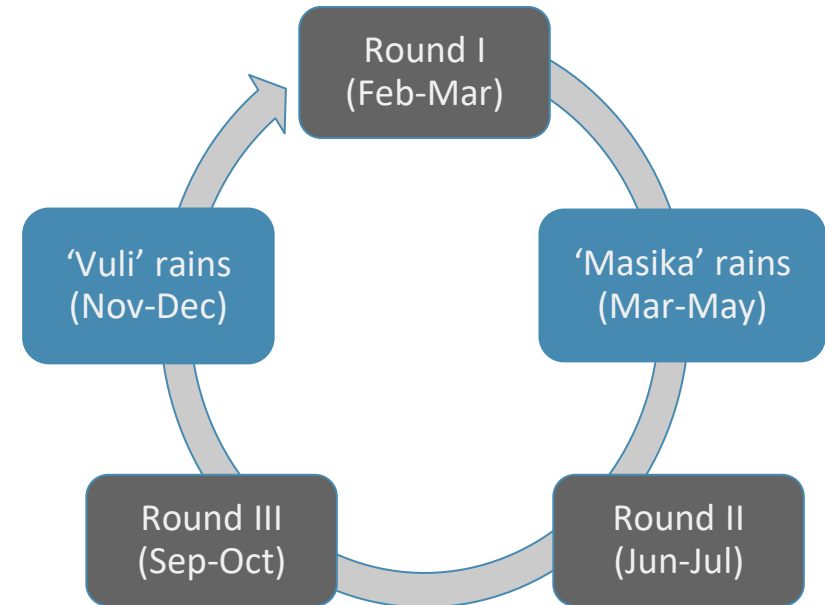
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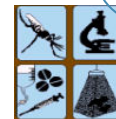
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Frequency of application



One Round =
8 weekly cycles of application

One year =
3 Rounds / 24 weeks of application



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Setup of biolarviciding intervention

Surveillance & Monitoring

- Monitoring of routine data collected weekly by CORPS during application
 - Number of habitats; larvae abundance; number and proportion of habitats sprayed; amount of biolarvicide used
- Monitoring of climate data
 - Rainfall (mm)
 - Temperature (C)
- Tracking of costing data


Evaluation

- Conducted in implementation and matched control councils
- Focuses on:
 1. Evaluation of facilitators and barriers of implementation
 2. Evaluation of community awareness and perception towards the intervention
 3. Process evaluation – assess adherence to SOPs
 4. Entomological evaluation with molecular analysis of adult mosquitoes
 5. Epidemiological evaluation
 6. Evaluation of costing and cost-effectiveness analysis

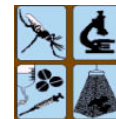
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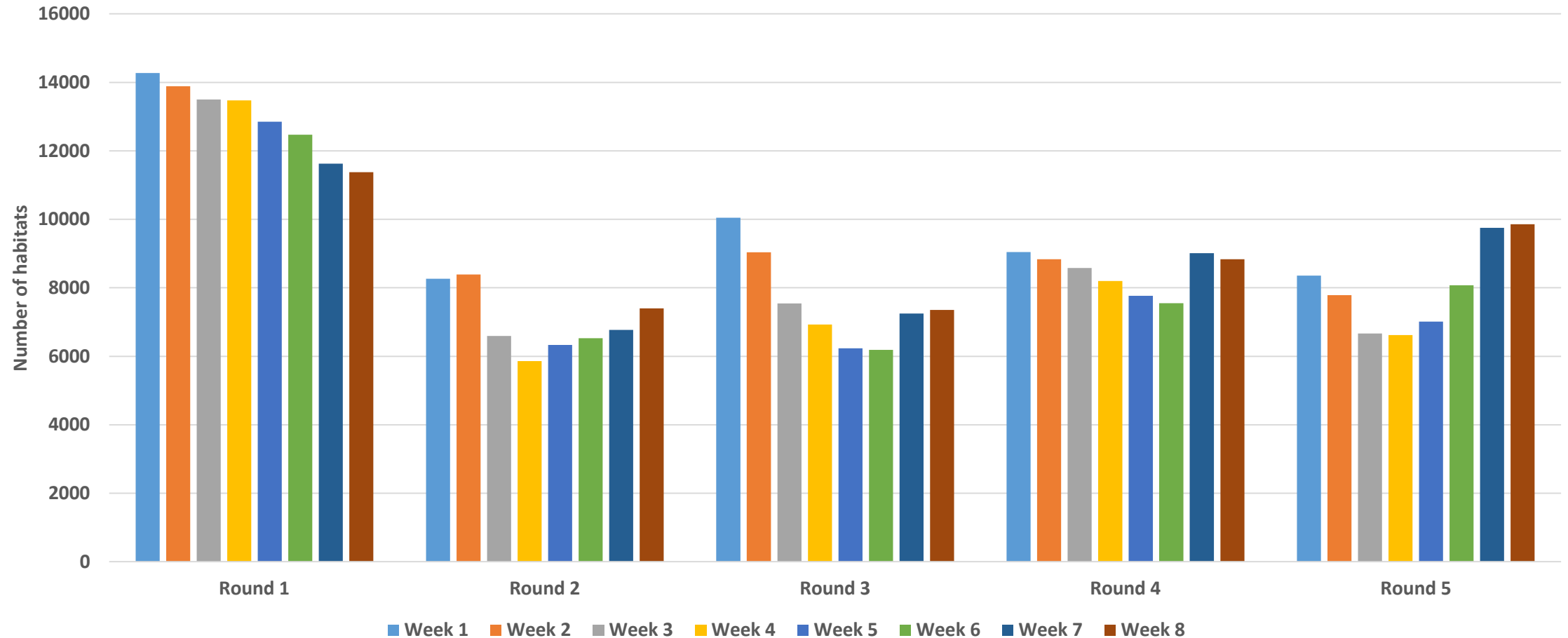
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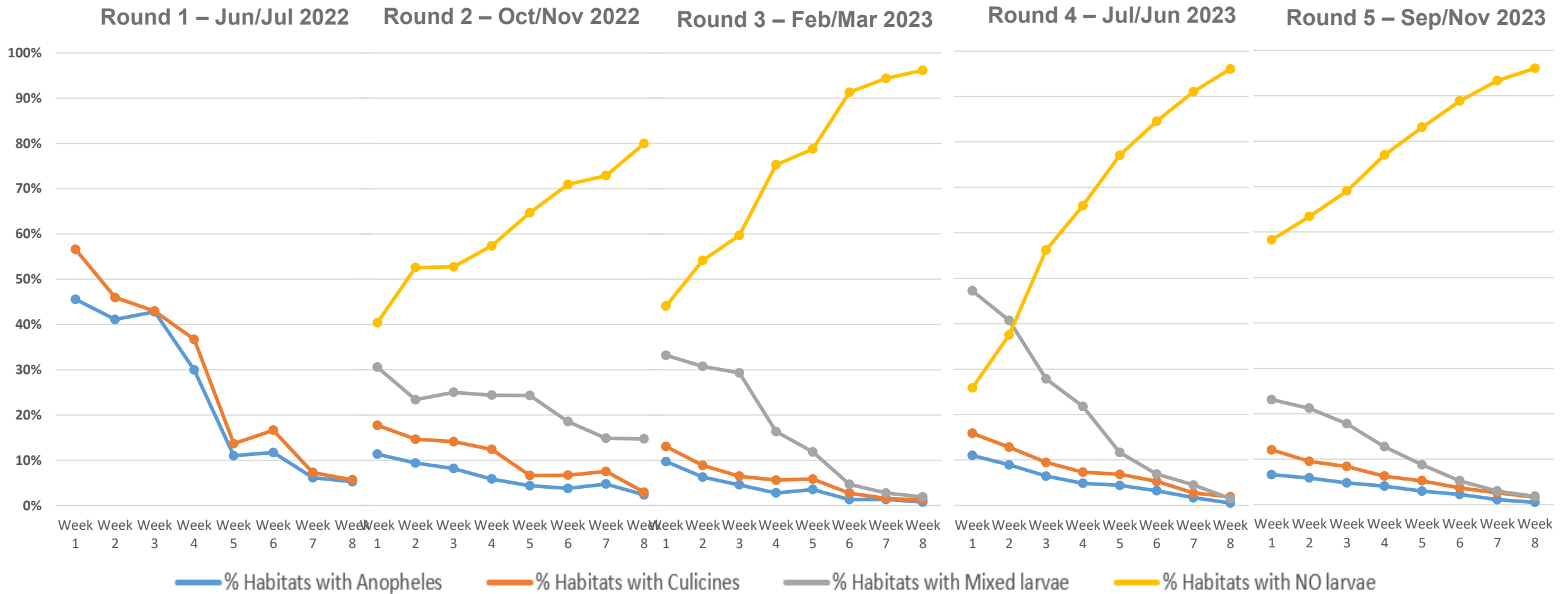
Results of biolarviciding intervention

Number of habitats identified per week - pooled data across all 3 councils



Results of biolarviciding intervention

Proportion of occupancy of larvae within habitats – pooled data across all 3 councils



We see a rise in proportion of habitats with no larvae (yellow line) across the eight weeks in all 5 rounds – highlighting clearance of larvae within habitats

Costing updates on biolarviciding intervention

Activity	Total (USD)
Setup	472'773
Baseline	63'626
R1	205'596
R2	147'742
R3	200'321
First year of implementation	1'090'057
R4	144'400
R5	164'112
R6 (ongoing)	86'645
Electronic data entry (ongoing)	69'460
Coordinating other central level activities (ongoing)	34'951
Second year of implementation (ongoing)	499'567
Total	1'589'625

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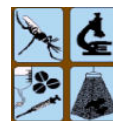


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Costing updates on biolarviciding intervention

Council	Handeni DC	Lushoto DC	Tanga CC
Total costs per person protected per year (USD, Year 1)	0.89 / person per year	0.68 / person per year	0.61 / person per year

Lessons learned and Next steps

Lessons learned

- ✓ Some habitats cover a large surface area (greater than 1,000 m²) which would require application of biolarvicide through different techniques for smooth implementation
 - ✓ Use of different equipment, including motorized pumps, drones
 - ✓ Use of different formulation of biolarvicide – including pellets
- ✓ Supervision of the intervention was conducted at the village/street and ward level: need to include health care facilities in the hierarchy of supervision
- ✓ Application of biolarvicide followed a seasonal approach: consider different modalities of application, for example: continuous or biweekly
- ✓ The intervention focused on biolarviciding only: include environmental management (habitat modification and manipulation)

Next steps

- ✓ Complete evaluation and disseminate results of the biolarviciding intervention

Thank You!

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