

# Malaria control in migrant laborers working in agricultural farms in Metema Region, Ethiopia: Current practices, feasibility, and acceptability of new malaria interventions

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## Background

An estimated 400,000–500,000 seasonal migrant workers move from the highlands (relatively low malaria endemicity) to the lowlands (higher malaria endemicity) of Amhara, Ethiopia, each year during planting, weeding, and harvesting seasons (June–November). These workers are susceptible to malaria infections during their travel and/or stay at farm camps in the lowlands and have significant barriers to the use of malaria prevention and control measures. Furthermore, they risk bringing malaria back to their home communities in the highlands.

The objectives of this study were to:

- Gather basic characteristics of all agricultural farms in Metema and Gende Wuha (Amhara Region), Ethiopia.
- Understand the current malaria control interventions and behaviors associated with malaria at farms.
- Evaluate the feasibility and acceptability of implementing malaria prevention strategies for seasonal migrant workers during their work at the farm and upon their return home.

## Methods

This was a descriptive mixed methods study conducted between September and October 2016 using quantitative and qualitative methods.

**Quantitative methods** included a cross-sectional farm assessment survey using a standardized questionnaire.

- Data from 285 agricultural farms including geo-reference coordinates and information on the number of employees hired at the peak season were collected.
- Additional information on farm operations, assessment of malaria risk-related behaviors, and current malaria control strategies on the farms was collected from a subset of 102 randomly selected farms.

**Qualitative methods** employed were key informant interviews (KIs), focus group discussions (FGDs), and direct observations.

To understand the feasibility and perspectives of potential malaria interventions implemented at farms:

- Five FGDs were held with migrant laborers.
- Fourteen KIs were held with farm owners and key stakeholders such as policy makers and health and labor staff.

A malaria test and treat intervention based on school and community network surveillance and referrals of returnee migrants to health posts was implemented among migrant returnees to four health post catchment areas. To evaluate the feasibility and acceptability of this intervention:

- 4 FGDs were held with returning migrant laborers.
- 4 FGDs were held with 4 community leaders, 4 health development army members, 2 health extension workers, 1 surveillance assistant, and 2 school teachers and children.
- 4 KIs were held with community leaders.

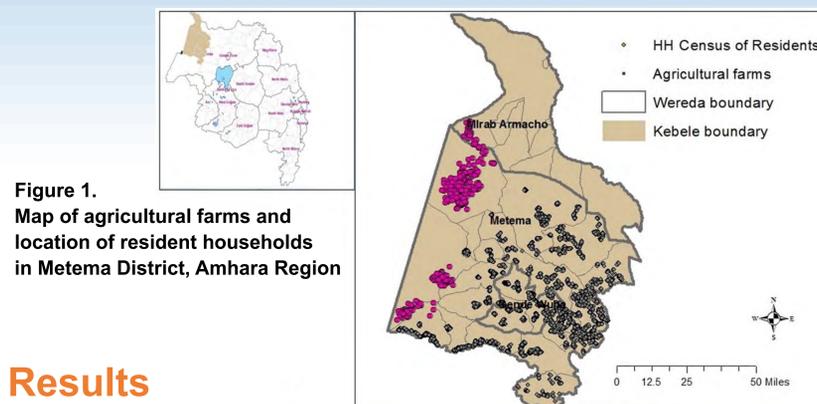


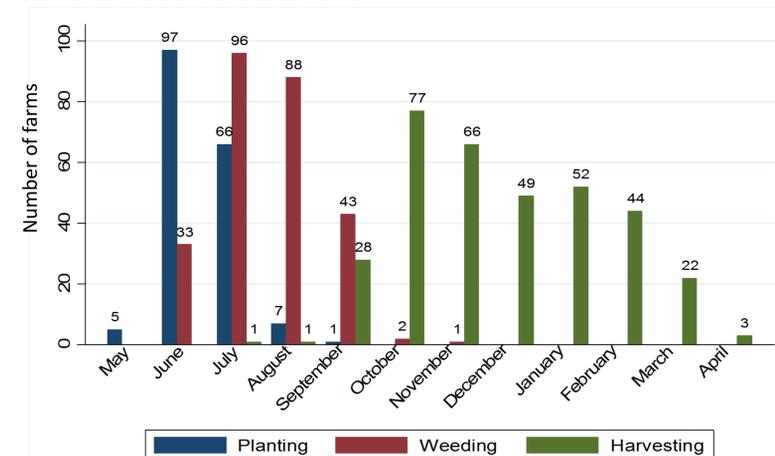
Figure 1. Map of agricultural farms and location of resident households in Metema District, Amhara Region

## Results

### Quantitative farm assessment survey

- Malaria control practices such as providing bednets, spraying, and sleeping quarters were provided by 24.5% of the farms.
- Formal health care at the farms was offered by 30.4% of the farms.

Figure 2. Number of farms (total n=102) hiring laborers to plant, weed, and harvest and number of workers hired



### Qualitative: perspective at farms

Many migrants and key informants stated that the health facility was too far away to reach at the first sign of symptoms, and only if a case was severe did individuals seek treatment. In addition, many migrants reported dissatisfaction with their working conditions and were unaware of their rights.

Everyone agreed that there is a critical need to provide malaria prevention materials to migrant laborers working in Metema. However, the number of migrants and the remoteness and size of the region makes any intervention difficult and expensive to administer. Additionally, there is no agreement on who would be responsible for these activities.

All migrant workers believed a test and treat intervention at the farms or in their home kebeles (villages) would work, and stated that they would comply with such interventions.

### Intervention design

A community strategy to clear malaria from returning seasonal migrant workers was implemented where, upon return from farms, workers were referred to the health post to be tested for malaria and treated if positive through health workers, schools, and surveillance assistants.

### Qualitative: post-intervention

Between November and December 2016, a total of 65 migrant workers were referred by schools (12), HDAs (35), and self (18) to the health post for testing, of which 20% tested positive with a rapid diagnostic test (RDT).

The following problems with the interventions were identified:

- Community stakeholders felt that monitoring and evaluation was needed and that there were no incentives for administrating bodies.
- Some schools, health workers, and surveillance assistants had difficulty in finding migrants.
- Some migrants reported that health posts were closed and some lacked RDTs/medicines.
- Some migrants questioned the validity of the RDT.

Suggestions to improve the intervention included:

- Community stakeholders recommend that awareness activities should be ongoing, and that improved and better outreach through health workers is necessary.
- Migrant workers suggest that other malaria elimination practices such as bednet distribution, indoor residual spraying, and control of mosquito breeding sites should also be conducted.
- Migrants and health workers recommend that adequate stockpiles of malaria RDTs and medications are needed.

## Conclusions

- Setting up mobile clinics or deploying nurses or health workers in the farm areas would give migrants the opportunity to seek more formal health care, and in a timely manner.
- Mosquito net screenings to cover openings in shelters and/or sleeping areas (mosquito proofing) can be conducted.
- An intervention that increases awareness in the entire community is effective but it needs to span a longer time period. However, the effectiveness of a specific assessment to test and treat workers on farms before they leave should be explored.
- Health post working hours should be clearly posted and communicated, and there should be enough RDTs and antimalarial drugs in stock.
- Social and behavior change communication should be strengthened to build trust in the validity of malaria RDT testing.



Sleeping space for migrant laborers in Metema, Amhara, Ethiopia.