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Malaria Control in Tajikistan

USAID FINAL REPORT

**Final Report: January – December 2005
(Includes the No-Cost Extension Period from October - December 2005)**

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I. GENERAL INFORMATION

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Program Title: Malaria Control in Tajikistan
Country: Tajikistan
Time Period Covered by Report: 1/01/05 – 31/12/05

II. PROGRAM OVERVIEW

A. GOALS AND OBJECTIVES

To improve the health of populations living in malaria endemic areas of Tajikistan through reduction of the malaria burden.

The program aims to:

- a) Support malaria control activities in Tajikistan through close collaboration with the Ministry of Health;
- b) Build the capacity for malaria diagnosis and treatment by health professionals and authorities at the primary health care level, enabling the planning and implementation of effective, evidence-based malaria control programming;
- c) Promote sustained progress in malaria control by aiming at behavior change through social mobilization, enabling populations to take functional responsibility for their health.

B. PROGRAM TIMELINE

The program was originally scheduled to cover the period of January 1, 2005 through September 30, 2005. However, a no-cost extension of three months was applied for and granted (see Annex 1: *Revised Activity Timeline*). The program framework intends to combine two types of USAID grants: (i) the program support grant for continuation of the formerly regional Roll Back Malaria program in Tajikistan, and (ii) Training Assistance grants, or TARFs (there are four TARF in accordance with the types of trainings conducted: Laboratory Technician, Primary Healthcare Worker, Outreach Worker, and Case Management trainings). The originally proposed timeframe for the training component of the project has been shifted correspondingly due to delays in finalizing the main grant and the TARF agreements and dispersal of funds. The training activities thus commenced during the second quarter of the year and were completed in December 2005 during the no-cost extension period.

The extension allowed Merlin to provide further technical assistance to the medical facilities in Khatlon and to build the research and monitoring capacity of the national health system through data and information sharing and training. Support to surveillance sites was continuous, providing on the job training to healthcare workers and the primary healthcare level. In addition, Merlin continued to monitor how previously trained community leaders, schoolteachers, and health workers assembled community gatherings to spread malaria prevention messages in the remote and isolated villages.

The results of the survey of breeding areas and monitoring of taxonomic states of malaria vectors and other Anopheline mosquito species encountered in the areas surrounding Kurgan Teppa are still under analysis. The survey was conducted through local entomologists, who were trained in collection, rearing, and storage techniques prior to the field exercises. Many of the participating entomologists had not had training or materials to work with since the collapse of the Soviet Union. The status of any unidentified mosquitoes (adults caught and field collected link bred specimens) are to be studied by the US Walter Reed Biosystematics Unit and the UK Natural History Museum under agreed protocols with both institutions once the samples successfully arrive in the US and the UK.

C. PROFILE OF TARGETED POPULATIONS AND NEEDS IDENTIFIED.

Malaria is predominantly a rural illness most acutely affecting impoverished groups such as agricultural workers, with children and pregnant women being at particular risk. Disease episodes impose high and regressive cost burdens on patients and their families. The cost of one malaria episode in Tajikistan is estimated to represent on average a 20% of the average monthly household income, without factoring in the cost of drugs.

The concerned program supported malaria control activities in Tajikistan only. The key program areas identified during assessment stage have been addressed through comprehensive programming, which embodies malaria control activities at the policy, practice, and perception levels.

Laboratory Supply Support

In order to maintain the ability of the MoH personnel to accurately diagnose malaria, essential laboratory supplies are needed. Furthermore, in addition to supply and complimentary training activities for laboratory technicians, quality assurance mechanisms in parasitology laboratories need to be continually fostered.

Training

In order to improve MoH capacity in malaria diagnosis and treatment, Merlin has developed a comprehensive and integrated training program that addresses gaps in knowledge and practice among health care providers at different levels, from doctors and nurses of rural health centres to the oblast-level infectious disease specialists. All training curricula are developed jointly with the MoH and WHO, incorporating the most recent national protocols and WHO guidelines while being tailored to the specific needs of the trainees and their districts.

Laboratory seminars designed with the Tropical Disease Centre (TDC) and facilitated by teams comprised of Merlin and SES lab specialists have increased the human resources capacity for accurate diagnosis of malaria and other diseases.

In its health education and community awareness efforts, Merlin has achieved positive changes in behaviours that would have undermined an otherwise sound control strategy. Efforts have been focused on promoting treatment seeking and use of insecticide-treated bed nets. Community mobilization activities facilitate people to create an enabling environment in which the program thrives. Further monitoring of community gatherings and schoolteacher training sessions during the no-cost extension period ensured that basic messages about malaria prevention were delivered to the target audiences.

Surveillance and outbreak response training have met the long-neglected training needs of primary health care workers and SES specialists in malaria recognition, reporting, and appropriate outbreak response.

During the no-cost extension period, Merlin conducted an intensive entomology training to enhance theoretical and practical field entomological methods of malaria control and to build the capacity of health staff in operational research.

Epidemiological Surveillance

Over several years, Merlin has been involved at each level of the health system to assist in developing health management information systems (HMIS) and constructing a politically neutral infectious disease surveillance system. Merlin's epidemiologists have evaluated the current MoH data collection and reporting system and found significant limitations in the official reporting system, many commencing at the primary health care level where the data is obtained from.

Following are some of the shortcomings observed by Merlin - Tajikistan's epidemiology department¹:

- It is not clear how well the prikaz² on reporting health facility reporting is followed; there is no widely used form to ensure consistent reporting and often no case definitions to aid accurate reporting. It is not clear whether there are any means to ensure a case is not counted twice if the patient visited two health facilities (e.g. following a referral).
- A large number of reports are required of health workers, so accuracy may be sacrificed for speed. Meddom staff send reports to the SUB level on a weekly basis, and thereafter SUBs provide weekly reports to SES and CDHs. Usually a single person is in charge of reporting in a health facility, a legacy of the Soviet 'statistical' method.
- Many ill people do not seek medical care as it is costly and may result in hospitalisation (which is oftentimes felt to be an unnecessary burden), and cases of those not hospitalised may not be reported or not followed up, as Merlin observed for some malaria patients treated on an out-patient basis.
- If patients do seek care they may not be accurately diagnosed, particularly if laboratory confirmation is required for diagnosis, as there may be no laboratory or testing available. One chief doctor of a CDH claimed that there were confirmed and unconfirmed categories of diagnosis for patients, although there was no evidence of this aside from the weekly reports of suspected cases submitted to SES compared to the confirmed cases described in the monthly reports to SES.
- In some districts the chief doctor of the CDH said that if a report was not submitted (e.g. due to bad weather making roads impassable) in one month and a report for 2 months submitted the following month, all cases will be submitted to SES as if for a single month³.
- There is no record of how many sites have reported in a particular month, so no means of knowing at a higher level that a fall in cases is not purely the result of one month where reporting was impossible for a number of health facilities.
- In addition, there still remains the "blame culture" that encourages under-reporting, leading to systematic and deliberate reduction of the number of cases at each successive level of the

¹ Internal document: Evaluation of Merlin Tajikistan Epidemiology Sentinel Surveillance System, August 2005

² Prikaz No. 353 "On Epidemiologic Control" (1993), No. 192 "On Epid. Surveillance, Notification and Treatment" (2005); "Law of the Republic of Tajikistan on Sanitary-Epid. Security of the Population - No. 49", 2003

³ This practice is not officially sanctioned, and does not appear to occur frequently, though will still have negative implications on data veracity.

health system as data is combined appears to occur. This culture appears to start at the highest levels.

Merlin started sentinel surveillance in Khatlon in 2001, thereafter incrementally expanding the system to include 15 sentinel sites in 15 districts of Khatlon and RRS, and six sites in the six districts of the Rasht Valley. Each site includes information from a central *SUB* or *SVA* medical facility, which in turn is responsible to collate data from the surrounding *Meddoms*, which are the primary medical posts. Reports are collected monthly with monitoring of the accuracy of the reporting based on cross-checking reports with the information catalogued in patient registration books. Merlin medical staff provide onsite training where gaps are found, including reinforcing simple clinical case definitions for a limited number of diseases. The system is designed to follow World Health Organisation (WHO) surveillance standards, and has an underlying philosophy of: *simple and consistent reporting of a limited number of important conditions at primary health care level using clear case definitions and encouraging accuracy, with the intention of using the data for improved population health, including at the level at which it is collected.*

The main value of the sentinel surveillance system is its potential ability to impact on the official MoH capacity to manage and utilise health information. In Tajikistan, data from the 15 functioning sentinel surveillance sites has helped the MoH authorities to realize the shortcomings of the existing HMIS and take steps to improve it. The long term utility of the system as a user-friendly, efficient, and standardized sentinel surveillance system for government planning will depend on the political and functional will of local authorities to maintain and use the system.

D. GEOGRAPHICAL LOCATIONS OF MAJOR PROGRAM ACTIVITIES

Geographic Areas of Activity: Tajikistan (Khatlon, Sugd, and RRS Oblasts, with some villages in GBAO as well)

Number and Type of Beneficiaries Targeted: 3,000,000 indirect beneficiaries

III. PROGRAM PERFORMANCE

A. PROGRAM PERFORMANCE VIS-À-VIS OBJECTIVES

RESULTS

1. Increased capacity of the PHC systems to provide prompt diagnosis and treatment of malaria

RELATED OBJECTIVELY VERIFIABLE INDICATORS (OVI)

- Train 200 PHC providers (nurses, feldshers, and doctors) in management of uncomplicated *P. Vivax* malaria, issues of treatment compliance, and the main concepts of counselling for malaria patients
- Train 60 laboratory technicians in malaria microscopy
- Provide refresher courses for 75 lab technicians in malaria lab diagnosis
- Supply parasitology laboratories with essential equipment and materials for malaria diagnosis
- Train lab technicians in microscope maintenance and minor repair
- Provide monitoring and quality control of malaria diagnosis and treatment services
- Deliver entomology training to enhance theoretical and practical field entomological methods of malaria control during the no-cost extension period for 13 entomologists from the Khatlon Tropical Disease Center

Achievements

- In total, 81 chief doctors and 123 head nurses and feldshers from 25 districts of Khatlon and 11 districts of RRS were trained on management of malaria during July, August, and September 2005.
- 60 lab technicians from Khatlon and RRS have been trained in basic malaria microscopy.
- 75 lab technicians were provided with 5 day refresher trainings.
- 75 lab technicians have been trained in microscope maintenance and minor repair. This activity was combined with refresher training for lab technicians.
- 69 parasitological laboratories in Khatlon and 49 in RRS and Sugd have been provided with lab reagents for malaria diagnosis.
- 69 parasitological labs have been monitored during the project period in order to assess maintenance of stocks. The practical skills in blood smear examination, and theoretical knowledge of 68 lab technicians were assessed using special questionnaire and tests. Additionally, the monitoring teams conducted pre- and post-tests to evaluate the knowledge and practice of PHC workers on malaria case management.
- 12 entomologists, (out of 13 targeted) were trained in entomology techniques, operational research, and practical field work.

ACTIVITIES BY OBJECTIVE

1.1 Training PHC providers in Case Management of malaria

Two hundred and four PHC providers from 25 districts of Khatlon and 11 districts of RRS underwent 2-day trainings in Case Management of malaria. Out of two hundred and four PHC providers, eighty one chief doctors were trained in four sessions and one hundred and twenty three head nurses and feldshers were trained during eight trainings. In total, 10 to 11 participants attended each of 12 sessions. Comparison of pre and post test results demonstrates an average improvement of 39% (from 51% to 90%) during these sessions (see Annex 2).

1.2 Training laboratory technicians in malaria microscopy

Sixty previously untrained lab technicians from Khatlon Oblast (thirty-nine participants) and RRS (twenty-one participants) underwent 15 day trainings in the microscopic methods of malaria diagnosis. The average performance of the participants from Khatlon improved from 37% in pre testing to 89.6% in post testing, while the average performance of the participants from RRS improved from 1.34% in pre testing to 68.7% in post testing (see Annex 3a).

Seventy five lab technicians have been trained during 5-day refresher courses. The technicians requiring refresher training were selected through testing of their diagnostic skills; those technicians who scored less than 85% in viewing slides of blood samples were selected for the refresher training cycle starting in July and ending in November 2005. Training participants were from Khatlon Oblast (59), RRS (15), and GBAO (1). Overall, the participants demonstrated a 26.5% knowledge gain, scoring an average of 64% in pre testing and an average of 90.4% in post testing (see Annex 3b).

1.3 Supply parasitology laboratories with necessary equipment and materials for malaria diagnosis.

Sixty-nine central medical facilities in Khatlon Oblast, which are responsible for a total of 87 parasitology laboratories⁴, received laboratory reagents for diagnosing malaria (see Annex 4a). The last distribution in the Khatlon parasitology labs took place in November 2005.

⁴ Some of the larger districts of Khatlon have more than three parasitology laboratories.

Distribution to 33 laboratories in RRS and 16 in Sugd was completed between May and July 2005 (see Annex 4b).

1.4 Train laboratory technicians in microscope maintenance and minor repair

Due to technical and operational relevance of the topics, the training on microscope repair and maintenance was incorporated as part of the 5-day refresher course outlined under Result 1.2, where all the seventy-five lab technicians from RRS and Khatlon were trained on aspects of maintaining microscopes and malaria microscopy (see Annex 3b).

1.5 Monitoring and Evaluation

Monitoring and evaluation of 69 parasitology laboratories in Khatlon Oblast was conducted after distribution of laboratory supplies (see Annex 5a for stock monitoring results).

Pre and post-tests are conducted during all trainings to evaluate training effectiveness and gauge potential impact of the program.

The knowledge and skills of 68 lab technicians was assessed during drug monitoring visits through control tests, including examination of blood smears and multiple-choice problems in controlled settings (see Annex 5b for monitoring results). Based on the results, an individual training approach was developed for the needs of each trainee. Each lab technician were given a set of malaria negative and positive slides to determine PPV and NPV (Positive and Negative Predictive Values). Those trainees who returned low pre-test scores were often new to the job, their number evidence of the high rate of staff turnover.

1.6 NCE Activity: Conduct a three-day training in field entomological methods of malaria control, retesting trainees after one month

The objective of the training was to develop skills in theoretical and practical field entomological methods of malaria control among Khatlon entomologists. Course topics included methods of field entomology (mosquito larvae collection, sampling methods, profiling, larva identification and age determination, fixing and preparation of larvae, classification, and taxonomy), methods of rearing of immatures, collection techniques, and collection of mosquito imago species. Contemporary control methods of various forms of mosquitoes proved of great interest for the trainees, including hydro-technical, physical, chemical, and biological control methods for *Anopheles* mosquitoes (see Annex 6a).

By allowing trainees to practice the skills developed in the course of the training at their workplace and retesting them after one month, knowledge retention post-training was able to be assessed. The results obtained using this delayed pos-test method have shown an average of 27.4% improvement in knowledge gained (range 7.7% - 47.7%) by the trainees during the three day training. The only female trainee of the group gained the greatest benefit as shown by her improving her score from 50.0% to 97.7% when retested. As this type of training for entomologists and health workers had not occurred for 13 years, the enthusiasm of trainees for the training was quite high and the feedback they gave for further improvement in delivery of services well considered.

Trainees were questioned on what they thought of the training and what further assistance they needed to better carry out their responsibilities in the future. All thought the training was too short and that future training should be from six to 12 days duration, allowing for further field work to put their learning into practice and providing for additional laboratory sessions to practice identification techniques. Post graduate training needs were identified as essential for professional development, something future malaria control programs should take into account. Please refer to Annex 6a and 6b for the detailed program and training report with pre and post-test results.

2. Strengthened epidemiological surveillance and outbreak response.

RELATED OVI

- Train 150 PHC workers in recognition, triage, referral, and reporting of malaria cases, and surveillance
- Collect information from and monitor sentinel surveillance sites
- Introduce Weekly Watch Charts as a part of the Malaria Early Warning System in all sentinel surveillance sites
- Maintain outbreak response capacity
- Monitoring and evaluation
- Survey of breeding areas and checking of the taxonomic state of malaria vectors

Achievements

- 150 PHC workers from 15 districts of Khatlon have been trained in recognition, triage, referral and reporting of malaria cases, and surveillance.
- Data collection from 13 sentinel surveillance sites continued. Data collection and monitoring in the 2 new sites established during the program started as of July 2005.
- Weekly Watch Charts have been introduced and data collected from 5 pilot sentinel sites in Khatlon Oblast.
- Outbreak response capacity maintained. Outbreak of malaria in Timurlalik in December 2005 was effectively dealt with.
- Regular monitoring of compatibility of clinical diagnosis with assessment, management, and referral conducted. The knowledge of PHC workers evaluated by conducting pre and post tests.
- Survey of breeding sites and checking of the taxonomic state of malaria vectors in the areas surrounding Kurgan Teppa conducted jointly with Republican Tropical Disease Center.

ACTIVITIES BY OBJECTIVE

2.1 Train primary healthcare workers in recognition, triage, referral and reporting of malaria cases, and surveillance

Merlin conducted a ToT session for one new Master Trainer to conduct follow up sessions with primary healthcare workers. After the successful completion of the ToT course, this trainer acted as a Master Trainer together with two previously trained Master Trainers. One hundred and fifty PHC workers from 15 districts of Khatlon Oblast have been trained by Master Trainers in 5-day sessions (see Annex 7).



*PHC Surveillance Training at SVA Guliston
(District Rudaki)*

2.2 Collect information from and monitor sentinel surveillance sites

Data on malaria has been collected on a regular basis from 13 sentinel surveillance sites covering 119 health facilities. Data collection from the 2 new surveillance sites consisting of 12 health facilities commenced in July of 2005. Please refer to Annex 8a for the sentinel site malaria data collection report. All sentinel surveillance sites are being monitored regularly during data collection process and information from these monitoring visits is compiled for further analysis (see Annex 8b for quantitative monitoring results for 15 sentinel sites and Annex 8c for a sample of the monitoring form in English).

2.3 Maintain outbreak response capacity

Emergency stocks of diagnostic supplies were maintained and preparedness of laboratories closely monitored. Supplies of anti malarial drugs were secured and distributed.

The process of introducing Weekly Watch Charts was initiated in 5 pilot districts. One site is being monitored as a pilot via weekly visits, whilst the other 4 sites are monitored during the course of monthly visits (see Annex 9 for Weekly Watch Chart data). Threshold values of more than two cases per week for two consecutive weeks in a given site have been set in order to trigger outbreak investigation response. Should the threshold be crossed, the concerned site contacts Merlin and SES to investigate if the increase in cases is genuine, and thereafter the details of the outbreak. In order to avoid hyper diagnostics or false detection SES workers are advised by Merlin to visit the sites and investigate each case individually, for in the past it has been suspected that cases have been incorrectly registered in order to falsely demonstrate sound case detection.

During the final quarter of 2005, two cases of falciparum malaria were detected in SUB Tanovshi (Meddom *Jairali*) of Temurmaliq District. Two out of four tests taken on 19.12.05 proved positive. Merlin, jointly with SES and TDC investigated the area considering that fact that it happened out of normal malaria transmission season. It was found out that both these cases were wrongly treated as vivax and typhoid fever about one month earlier. Soon after the identification of these two cases, Merlin epidemiology team together with oblast TDC took 1006 samples from this territory. In total 18 cases of malaria falciparum were detected. Additionally Merlin and HLC teams offered health education to affected communities and Merlin provided extra supply of anti-malarial drugs to the infectious disease department of SUB Tanovchi in Timurmaliq District.

The Ministry of Health is still fairly reluctant to grant access to genuine statistics of the malaria burden, a problem to some extent overcome by the surveillance activities. Data is collected from SES and sentinel site *meddoms* on a regular basis, though *meddoms* are often late in submitting data. In order to compliment official data and sentinel surveillance data, in the course of outreach activities Merlin health education workers collect anecdotal information from community members on disease incidence. Should the anecdotal information demand, Merlin and SES visit the area for further investigation.

Sentinel sites are centered around a single SUB/ SVA per district, while there are five to six SUB/ SVA per district in total. It can then be expected that roughly 15-20% of caseload for a given district is recorded in the sentinel site data, whilst the Oblast SES data should cover 100% of the disease incidence recorded for each district in the oblast. A comparison of the data from 11 sentinel sites and that from Khatlon Oblast SES demonstrates the officially reported data must be several times less than the reality (see Annex 10). Assuming that the sentinel site data is more reliable, the Oblast SES data must either be vastly incomplete, or highly unreliable.

2.4 Monitoring and Evaluation

Pre- and post training tests were conducted during PHC training sessions (see Annex 7). Joint Merlin – SES teams visited sentinel sites to ensure the timeliness and accuracy of reporting, as well as to pinpoint areas for sentinel site staff capacity building (see Annex 11 for qualitative monitoring report).

The Merlin epidemiology team continues to evaluate the accuracy and promote the timeliness of information reported by the sentinel sites. All sentinel surveillance sites are being monitored regularly during the data collection process (see Annex 8b for quantitative monitoring results for 15 sentinel sites and Annex 8c for a sample of the monitoring form in English).

2.5 NCE Activity: Survey of breeding areas and checking of the taxonomic state of malaria vectors in the areas surrounding Kurgan Teppa jointly with the Republican Tropical Disease Center

No survey of Tajikistan mosquito species has been conducted since the ACTED work supervised by the London School of Hygiene and Tropical Medicine was undertaken prior to 2000. The status of Anopheline mosquitoes (adults caught and field collected link bred specimens) in Tajikistan is currently unknown since the mosquito population dynamics varies quite drastically from season to season.

Merlin's expatriate Roll-Back-Malaria Coordinator, an entomologist experienced in the survey of mosquito breeding areas, spearheaded the survey of breeding sites and the sample collection for the checking of the taxonomic state of malaria vectors and other Anopheline mosquito species encountered in the areas surrounding Kurgan Teppa. The RBM Coordinator trained Merlin and TDC staff in collecting, rearing, and storage techniques for this activity.

Merlin has sent the collected specimens to the Natural History Museum in the United Kingdom, which is to forward them to the Walter Reed Biosystematics Unit in the United States for analysis. Due to difficulties in transporting biological samples across national borders, the arrival of the samples in the UK has been delayed, hopefully to arrive within the coming month.

The outcome of the taxonomic study will help reveal any changed behavioural and distribution patterns of the collected vector species and help clarify taxonomic status of some species complex members. The study results will ideally inform malaria control planning measures and help determine the direction of future entomological investigations. By undertaking the activity in partnership with the oblast TDC, the process has contributed to the capacity of health staff of both Merlin and the TDC in operational research and further strengthened professional and research links at the local level.

3. Increased community awareness and mobilization for behaviour change.

RELATED OVI

- Train a cadre of Master Trainers (24) in methods of health education on malaria and its prevention
- Train 240 health workers to conduct health education sessions at the community level
- Train 100 school teachers in methods of health education appropriate for children
- Convene meetings and discussions for community leadership with trained village health workers and school teachers
- Facilitate community gatherings held by their leadership to discuss local issues related to malaria, its prevention and treatment
- Develop and distribute health education and social mobilisation materials in local languages
- Monitoring and evaluation

Achievements

- 27 HLC workers trained as Master Trainers in methods of health education on malaria and its prevention.
- 240 health workers from 6 districts of Khatlon and 6 districts of RRS have been trained in health education methodology and techniques.
- 100 schoolteachers from Khatlon and RRS have been trained in health education methodology and techniques suitable for children.
- 11 community leaders trained in Community Mobilization methods.
- Community gatherings organized by trained community leaders.

- The health education materials (leaflets and flipcharts) have been updated and distributed to all training participants.

ACTIVITIES BY OBJECTIVE

3.1 Training of Master Trainers, Health Workers, and School Teachers

Merlin conducted Training of Trainer courses for 27 HLC workers of Khatlon Oblast and RRS (see Annex 12). After completion of the courses, the Master Trainers went on to conduct subsequent trainings for HWs and Schoolteachers in their respective districts.

Training for 240 Health Workers on HE methodology and techniques has been conducted in 24 one-day sessions. Participants were from 6 districts of Khatlon Oblast and 6 districts of RRS (see Annex 13).

100 Schoolteachers from 8 districts in Khatlon and RRS have been trained in health education methodology (see Annex 14).

3.2 Convene meetings and discussions for community leadership with trained village health workers and schoolteachers

A one day training focused on methods of community mobilization for using local resources for malaria prevention was conducted for 11 community leaders from 6 districts of the Kulyob zone of Khatlon Oblast (see Annex 15).



Community Leadership Training in Kulyob

3.3 Facilitate community gatherings held by their leadership to discuss local issues related to malaria, its prevention and treatment

After the trainings for community activists were conducted, trainees became responsible for organizing community gatherings to discuss and find solutions for malaria related issues. Each of the 11 trainees conducted 9 sessions attended by a total of 2,688 people. The sessions held focussed mostly upon environmental issues in malaria control, namely breeding sites of mosquitoes. The Merlin Community Mobilization Team monitored the community gatherings (see Annex 16).

3.4 Develop and distribute health education and social mobilisation materials in local languages

An Information, Education, and Communication (IEC) leaflet and flipchart on malaria were re-designed based on feedback from pilot testing to make them more appropriate for local audiences⁵. All participants under training activities in Result 3 received copies of the leaflet and flipchart.

3.5 Monitoring and evaluation

The effectiveness of the participatory and community mobilization process assessment showed that sessions held by community leaders were effective and stimulated community action to prevent malaria. For example, in some communities people opted to stop cultivating rice near their households, and in other cases removed stagnant water and cleaned drainage canals. The Merlin team recorded the number of broader community gatherings held by local leaders trained under Activity 3.1 (see Annexes 16 and 17).

B. EFFECT ON OVERALL PROGRAM PERFORMACE OF UNFORESEEN

⁵ Due to the large size of the electronic files, they have not been annexed to this report.

CIRCUMSTANCES.

The grant approval reception was later than anticipated (early March 2005), naturally delaying the commencement of activities. Additionally, delays in reception of the TARF agreements (2 of the TARF contracts were not signed until July) required the proposed trainings to be postponed. The outbreak of Acute Watery Diarrhea slightly delayed the implementation of Activities 3.1 and 3.2, as intensive health education measures to prevent the spread of the epidemic were engaged in. Within the no-cost extension period granted, all activities were completed, except the entomological survey (no-cost extension Activity 2.5), the results of which are awaited pending analysis in the UK and the US.

IV. RESOURCE USE / EXPENDITURES

A. SUMMARY OF RESOURCES COMMITTED

INTERNATIONAL STAFF

International staff costs reported for the January – December 2005 period are as follows, detailed in the financial report:

- 1) Country Director - 5 months
- 2) Financial Coordinator - 2 months
- 3) RBM Intern - 4 months
- 4) Rollback Malaria Coordinator was recruited in September and was in place until the end of December 2005

Accommodation has been allocated according to the ratio of International staff time on the project.

NATIONAL STAFF

Program staff in Kurgan-Teppe were charged to the project from April to December.

Support staff in Kurgan-Teppe were charged to the project April to June, with the exception of some drivers who were charged until December.

EQUIPMENT & CONSUMABLE MATERIALS

Orders for equipment and supplies have been purchased as required to carry out the project work. One desktop computer was purchased for donation to Tropical Disease Centre.

Other equipment expenditures were on repair of office equipment (printer, computers), purchase of adaptors and a USB external HDD for office. Small repair of lab equipment in parasitological laboratories (extension cables for microscopes, etc.) was also undertaken.

Consumables materials purchased and distributed consisted of lab equipment and reagents for parasitological laboratories.

TRANSPORT

Vehicle fuel and maintenance costs of the Kurgan Teppe and Dushanbe fleet were allocated to the project in proportion to the transport requirements of the project work.

OFFICE SUPPLIES

A proportion of office running and communication costs were allocated to the project according to usage.

B. BREAKDOWN OF EXPENDITURE BY OBJECTIVES

Please see the attached financial report.

V. CONCLUSION

The Merlin-USAID malaria program has been an essential part of the drive to control malaria in Tajikistan and contain its spread to neighboring countries. The malaria situation in Tajikistan is not stabilized and the health care sector, especially the Tropical Disease Center (TDC), remains unable to control malaria without external technical and financial support. Although the statistics collected give the impression of a decrease in malaria incidence over the past three years, the barriers to treatment-seeking behavior, especially for the poorest segments of the population, likely result in low case detection rates, thereby compromising inferences made from analysis of reported data.

In addition, the Health Lifestyle Centre (HLC) is a relatively newly-formed branch of the MoH of Tajikistan and remains in need of theoretical and technical support in the control of malaria. Moreover, the Global Fund Grant for Malaria was submitted by the government of Tajikistan in June 2005. The grant was completed in a hurried fashion towards the submission deadline, and though lacking the participation of all stakeholders, is relatively complete. The grant has been accepted, and it is expected that the program will become functional in the middle of 2006. Merlin is currently undertaking negotiations with UNDP, the Principal Recipient of the Global Fund for Malaria grant, for undertaking activities as a sub recipient.

Coordination of health activities in Tajikistan remains quite poor on the national level, there having been only a single health coordination forum meeting (October 2005) since May 2005. At the regional level, however, coordination has improved as of August 2005, with 3 monthly health coordination meetings conducted in Khatlon under the Merlin's lead. Merlin continues to advocate to the relevant actors for continuing to hold national forum meetings and the developing a sector working group for the coordination of malaria control activities.

Outbreak of epidemic acute watery diarrhoea in Khatlon in July and August, necessitating Merlin's active involvement in the outbreak mitigation, led to postponement of program activities 3.1 and 3.2. These activities were completed in the fourth quarter of 2005.

All of the objectives and their associated activities have been brought to completion, except the entomological survey added in the no-cost extension period (Activity 2.5), the results of which are awaited. In compensating for the late start of the program, the no-cost extension period allowed Merlin to continue to develop and monitor the epidemiological and surveillance capacity, finalize numerous trainings, and undertake the entomological survey. All activities conducted by Merlin supported the MoH in the control and prevention of malaria and improved the capability and capacity of the local population and local institutions to cope with and prevent malaria. While the Global Fund for Malaria grant is expected to a further five years of investment in the control of malaria, complementary interventions which work towards malaria control through building the local capacity for maintaining long term control measures remain

necessary. Most especially, cross border initiatives with Kyrgyzstan, Uzbekistan, and Afghanistan remain essential.