

# SADCWaterLab Newsletter

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## 9th Chemistry Annual Evaluation Workshop successfully held in Addis Ababa, Ethiopia

*By Donald Masuku, SADCMET Regional Coordinator*

Delegates from a number of countries in Africa participated in the 9<sup>th</sup> SADCWaterlab Chemistry proficiency testing (PT) scheme annual evaluation workshop held in Addis Ababa, Ethiopia in November 2012. The workshop was opened by the Director of the Ethiopia Conformity Assessment Enterprise (ECAE) Mr Gashaw Tesfaye who welcomed all the delegates to the beautiful city of Addis and the home of the African Union. In welcoming the delegates, Mr. Tesfaye thanked the organizers and PTB for having accepted to bring the workshop to Ethiopia at a time when Ethiopia had just finalized the process of restructuring the quality infrastructure and established four autonomous bodies including ECAE whose main mandate is to provide robust certification, inspection and testing laboratory services to industry and the public in Ethiopia. The other three institutions are National Metrology Institute of Ethiopia, Ethiopia Standards Agency and Ethiopia National Accreditation Office.



Group photo of delegates at the Annual Evaluation Workshop

The week's workshop programme included a lab visit at the ECAE headquarters where delegates had an opportunity to see the equipment and capabilities of the new institute. The evaluation workshop was only for the chemistry analysis of water as there was no PT round for Microbiology analysis due to the decision that was taken in 2011 to suspend the Microbiology PT until the problems experienced with the preparation and distribution of samples have been resolved. The chemistry PT provider reported that there were 57 participating labs which came from most of the SADC and EAC countries. Samples were prepared gravimetrically based on pure water by spiking with pure chemicals. So reference values with small uncertainties could be calculated from the formulation process. Samples were distributed using DHL as courier.

*Continues on Page 2*

For the evaluation and assessment the reference value was used as assigned value. A plausibility check was made using results from the National Metrology Institute of South Africa and two German expert laboratories. To calculate z-scores (the difference between the lab results and the assigned value divided by a standard deviation for proficiency assessment) the standard deviation of the data set (calculated with Algorithm A described in ISO 13528) was used whenever it was smaller than a limit agreed between the participants in the previous evaluation workshop. This limit can be regarded as a fitness-for-purpose criterion.

It was reported that generally there is some improvements in the results of some laboratories whilst the other laboratories are consistently performing badly. There were group discussions and the general assembly during the week long programme and some of the key decisions that were taken include the following:

### **FISH PT**

The meeting was informed of the report of the survey that was conducted on the need for the fish PT and that 16 laboratories had indicated an interest to participate in the PT. It was resolved that since there is already an existing scheme in marine organism including fish matrix for trace metals organized by the Marine Environmental Laboratory of the International Atomic Energy Agency (IAEA) based in Monaco, the Secretariat was tasked to make contact with the IAEA to investigate possible participation of interested SADC laboratories in such a PT.

### **PTB FUNDING AND SUSTAINABILITY**

The PTB representative reiterated on the importance and the need for the PT scheme for Chemistry to be self-sustaining as PTB would reduce their support to the Chemistry PT and only sponsor accommodation and per diem for delegates to the annual evaluation workshops. Delegates would continue to meet their own flight costs and that as a further measure to ensure sustainability it was recommended that from this year the host country should also cover the venue costs and the duration of the workshop should be reduced from 5 days to 3 days. The funding of the Micro PT scheme would be reviewed once a decision has been taken on the way forward with the scheme.

### **SADC REGIONAL LABORATORIES ASSOCIATION**

The meeting was informed that at a meeting held in Durban, South Africa participants resolved to form a regional association of laboratories in SADC called SADC Regional Laboratories Association. Delegates at that meeting agreed that the regional association would be an association of 'regional national associations'. Consequently individual laboratories would be expected to join their 'national' associations at country level and that SADC Water Lab Association would be accommodated as an associate member.

### **QUARTERLY REPORTS BY LOCAL COORDINATORS**

It was resolved that local coordinators will now be required to submit **Quarterly Activity Reports** to the Secretariat regarding activities undertaken in a period under review in their respective countries.

The report shall include, but not be limited, to the following items:

1. Activities undertaken including,
  - Marketing of the various activities of the SADC Waterlab PT scheme and related programs.
  - Training and workshops held during the period under review (including those done through other initiatives).
  - Support given to local laboratories (if any).
2. Challenges faced during the execution of scheduled activities (including possible solutions that would help to overcome these challenges).
3. Planned future activities for the next quarter.

### **STATUS AND WAY FORWARD FOR MICRO PT SCHEME**

Dr Katrin Luden, the Micro PT facilitator reported on the status of the Micro PT scheme and the decision taken after discussions with the PT Provider (UNBS), PTB, SADC MET and the PMC. She informed the delegates that in 2011 during the Mauritius PT evaluation workshop it was decided not to send out samples for a microbiology PT unless there is a major step forward in the field of temperature controlling the samples and ensuring that they reach their destinations within the necessary time. It turned out that using temperature sensitive samples (as the liquid samples are prepared so far) is not feasible for the region. Although UNBS has made a great effort and sample preparation was satisfactory the problems encountered with logistics could not be overcome.

To avoid the problems with unstable materials faced up to present, it was decided to focus on more stable materials than the liquid and very natural samples used so far. As it was known that Botswana Bureau of Standards (BOBS) offers a PT in the field of microbiology, it was agreed to contact BOBS and to discuss whether there was a possibility to expand their national PT to the African region.

### **TRAIN THE TRAINER (TOT) PROGRAMME AND WAY FORWARD**

After a long discussion regarding the ToT programme and what has been done after the ToT training in 2010 the following were agreed as the way forward:

1. The National Standard Bodies (NSBs) of the 14 ToT trained persons will be contacted purposely to request them to take the lead in liaison with the trained persons in their country and ensure that National Training workshops in Quality Assurance in Analytical work are conducted.
2. Quarterly reports on training activities to be submitted to the WG Secretary.  
The report shall contain:
  - Training of any activity regarding Quality Assurance in Testing in the country (not necessarily by ToT trained persons in Livingstone but trained through other initiatives)Topics:
  - Number of participants
  - Any other relevant information
  - Any challenge/Gap

The Secretary of the WG will follow up the reports through the Local coordinators/TOT trained persons/ Members of the WG of respective country and forward the same to the SADC MET Regional Coordinator, Donald Masuku.

3. Time frame for National Training Workshops is planned for July-October 2013 considering budget time. Country Local coordinators to ensure National Training Workshops are conducted by October 2013. Training can also be conducted before July 2013 as it fits the country.
4. Update of the ToT database. The database to include persons trained through other initiatives.

The next evaluation workshop which is hoped will cover both chemistry and microbiology PTs will be hosted by the Kenya Bureau of Standards in Nairobi, Kenya during the week of 11-15 November 2013.

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## **ABSTRACT OF PUBLISHED PAPERS**

*The paper was published in the Journal for Quality, Comparability and Reliability in Chemical Measurement, Volume 17, Number 4, August 2012.*

### **Establishing PT schemes in developing countries: examples from Africa**

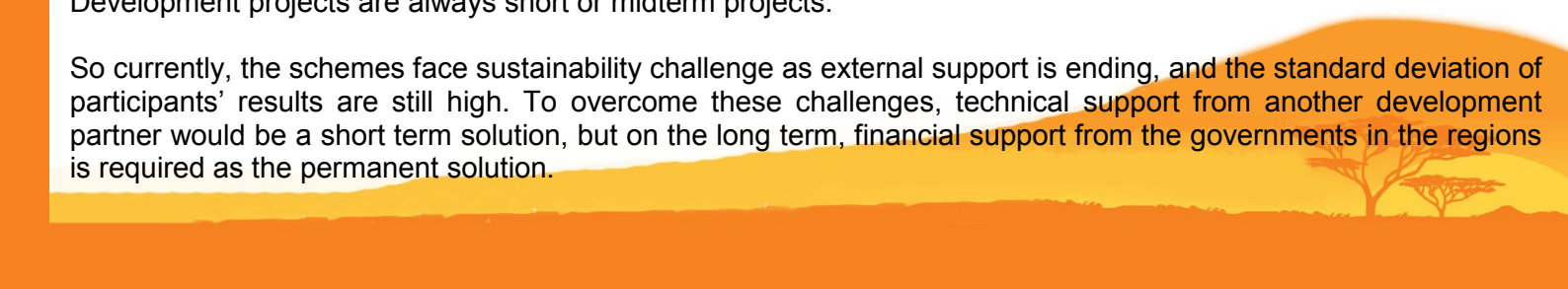
**Kezia Mbwambo<sup>(1)</sup>, Michael Koch<sup>(2)</sup>**

(1) Tanzania Bureau of Standards (TBS), Dar es Salaam, Tanzania

(2) University of Stuttgart, Germany

Abstract Developing countries face challenges in meeting requirements of importers and regulators due to inadequate resources in conformity assessments. Laboratories in developing countries fail to participate in proficiency testing (PT) schemes from abroad due to unaffordable cost. In the southern and eastern African regions, with support from German metrology institute, PTB, PT schemes for water, wheat flour, edible salt and edible vegetable oil have been installed to support regional laboratories in their competence improvement. There have been great achievements in terms of knowledge exchange, capacity building and skills improvement. Development projects are always short or midterm projects.

So currently, the schemes face sustainability challenge as external support is ending, and the standard deviation of participants' results are still high. To overcome these challenges, technical support from another development partner would be a short term solution, but on the long term, financial support from the governments in the regions is required as the permanent solution.



# 2013 Notification of the 10th SADCWATERLAB Proficiency Testing round for Chemical Analysis of potable water in Africa

The 2013 notification of the 10<sup>th</sup> SADCWaterLab Proficiency Testing round for chemical analysis of portable water in Africa was circulated on 5th April 2013 calling for interested laboratories to register for the PT scheme which is piloted by Namibia Water Corporation (NamWater). There is no membership fee but participating laboratories pay a participation fee of U\$200 for each chemistry PT round which is used by the PT provider to distribute the samples and administer the scheme.

## **CLOSING DATE FOR REGISTRATON: 17<sup>st</sup> May 2013**

Registration for each round is a very important part of the planning. **Registration is compulsory for every round and only registered laboratories will receive samples.**

Please complete the registration form obtained from the PT provider or available on SADC MET website on [www.sadcmnet.org](http://www.sadcmnet.org) and e-mail back to the PT provider.

The following information needs to be complete in the registration form:

- Name of the laboratory and contact person(s) (preferably two)
- Correct and physical and postal address for both contact persons
- Telephone and fax numbers (preferably two)
- E-mail address per contact person (company e-mail address is preferred but feel free to supply alternate e-mail in case of e-mail and internet problems.

**200 US\$ payment and proof thereof must be faxed or e-mailed before samples will be dispatched. The 200 US\$ payment is exclusive of bank charges. Any bank charges must be cleared by your respective organizations.**

## **BANKING DETAILS**

**BENEFICIARY:** Namibia Water Corporation (NamWater)

**BANK:** First National Bank, Namibia Ltd.

**BRANCH:** Windhoek Branch, Independence Avenue

**BRANCH CODE:** 28-01-72

**ACCOUNT NUMBER:** 555 00 144 676

**SWIFT CODE:** FIRNNANX

## **SCOPE:**

The round involves the distribution of six samples which will be prepared as follows:

**Sample 1, 2 and 3:** Sulphate, Chloride, Fluoride, Nitrate, Phosphate, Conductivity at 25°C in mS/m, Total Dissolved solids at 180°C in mg / l **[Gravimetric method only]**

**Sample 4,5 and 6 :** Calcium, Magnesium, Sodium, Potassium, Iron, Manganese, Aluminium, Lead  
Zinc, Chromium, Nickel, Arsenic, Cadmium and Cobalt

ANIONS	CATIONS
Sulphate as SO <sub>4</sub> in mg/l	Calcium as Ca in mg/l
Chloride as Cl in mg/l	Magnesium as Mg in mg/l
Nitrate as NO <sub>3</sub> in mg/l	Sodium as Na in mg/l
Fluoride as F in mg/l	Potassium as K in mg/l
Phosphate as PO <sub>4</sub> in mg/l	Iron as Fe in mg/l
	Manganese as Mn in mg/l
	Aluminum as Al in mg/l
	Lead as Pb in mg/l
	Copper as Cu in mg/l
	Zinc as Zn in mg/l
	Chromium as Cr in mg/l
	Nickel as Ni in mg/l
	Arsenic as As in mg/l
	Cadmium as Cd in mg/l
	Cobalt as Co in mg/l
<b>OTHER: [Sample 1, 2 and 3]</b>	
Conductivity at 25°C in mS/m	
Total Dissolved solids at 180°C in mg / l [ <b>Gravimetric method only</b> ]	

### **DISTRIBUTION OF SAMPLES: 10<sup>th</sup> July 2013**

The samples will be distributed to the local coordinators provided that registration forms were submitted and payments were received.

### **RETURN DATE FOR THE RESULTS: 30<sup>th</sup> AUGUST 2013**

The results will be entered onto a supplied result form and sent before or on the return date to the PT scheme provider.

### **PROFICIENCY TESTING PROVIDER:**

NamWater is the PT provider with Merylinda Conradie as the coordinator of running the scheme.

#### **Contact details for Ms M Conradie :**

**Tel:** (Int code +264-61) 71 2257

**Mobile:** +261 81 2421200

**Fax:** (Int code +264-61) 71 2097

**E-mail:** [conradiem@namwater.com.na](mailto:conradiem@namwater.com.na)

Unfortunately, results received after the specified period will not be included in the report. Please inform the PT provider before the exercise should your laboratory not be able to participate in this exercise.

### **EXERCISE REPORT:**

An electronic evaluation report will be supplied to all participants by the 18<sup>th</sup> October 2013.

*Continues on Page 6*

**PROGRAMME CHEMICAL POTABLE WATER PT FOR 2013:**

Activity	Due date	Responsibility
Closing date for registration & payment of participants	17 May 2013	Local Coordinators; Lab Managers
Distribution of the samples	05 July 2013	PT Provider
Deadline for submission of results	30 August 2013	Local Coordinators; Lab Managers
Evaluation of results and drafting of report	18 October 2013	PT Provider
2013 - Evaluation work shop hosted by KEBS [Kenya Bureau of Standards]	During 11 -15 November 2013	KEBS

Please incorporate these dates into your year planning to ensure a successful programme. If any of these dates have to be changed due to unforeseen circumstances, you will be notified in advance.

## SADCWATERLAB COLLABORATES WITH BOBS ON THE REVAMPED MICROBIOLOGY PT SCHEME FOR THE AFRICAN REGION

### BACKGROUND

During the PT Evaluation Workshop held in Mauritius in November 2011 it was decided not to send out samples for a microbiology PT unless there is a major step forward in the field of temperature controlling the samples and ensuring that they reach their destinations within the necessary time. It turned out that using temperature sensitive samples like the liquid samples prepared by Uganda National Bureau of Standards (UNBS), was not feasible for the region. Although the PT provider UNBS has made a great effort and sample preparation was satisfactory the problems encountered with logistics could not be overcome. In a final discussion in November 2012 with the SADC MET secretariat, the PT provider and PTB it became clear that the aim to transfer the German model of providing a PT was very ambitious and it was agreed to not take it further this way. However, still the need for an affordable PT within the region remains. To avoid the problems with unstable materials faced up to present, it was decided to focus on more stable materials than the liquid and very natural samples used so far. As it was known that Botswana Bureau of Standards (BOBS) offers a PT in the field of microbiology, it was agreed to contact BOBS and to discuss whether there was a possibility to expand their national PT to the African region.

After discussions between the BOBS management, BOBS laboratory staff, SADC MET Secretariat and PTB it was agreed to expand the existing BOBS National Quality Control Sample Exchange Scheme (NQCSES) to the African region in cooperation with the SADC MET secretariat and the SADC WaterLab Association. It was further agreed that the laboratories that participated in the SADC MET water PT will be accommodated in the next PT round that BOBS is going to offer in August/September 2013. There will be more parameters than in the former PT carried out by UNBS and the costs will therefore increase from 100 to 150 USD. The participating laboratories will have to pay in advance in order to ensure a timely purchase of the PT material. After an evaluation workshop envisaged for November 2013, the SADC WaterLab PMC should discuss the way forward concerning increasing the number of rounds (up to three per year) and increasing the costs.



## THE REVAMPED WATER MICROBIOLOGY PT SCHEME

The revamped PT scheme will be operated by BOBS in which competence of participating laboratories will be monitored through testing of selected materials at regular intervals during the course of each year.



Microbiology Laboratory Staff at BOBS headed by Pinkie Malebe, third from left

Proficiency tests (PTs) are an integral part of laboratory quality control procedures. It is an objective way through which a laboratory can have its performance assessed on a continuing basis by an independent body. Clause 5.9 of the ISO/IEC 17025: 2009 “General requirements for the competence of testing and calibration laboratories” requires a laboratory to participate in regular inter-laboratory comparison or proficiency testing as a means of assuring the quality of results.

### SAMPLES

The water sample(s) will be supplied as freeze dried or gel lenticules in vials containing any or a combination of the micro-organisms listed below. The laboratory has an option to choose any one or more of the parameters it wishes to test from the list below.

Accompanying the samples are full details of the samples and instructions for their proper handling and preparation.

Parameters under test include:

- Coliform bacteria
- *Escherichia coli*
- Sulphite Reducing *Clostridium perfringens*
- *Pseudomonas aeruginosa*
- Intestinal enterococci and
- Aerobic microorganisms or standard plate count at 22°C and 37°C.

Samples supplied: Freeze-dried or gel lenticules in a vial.

## FREQUENCY OF ROUNDS

For the year 2013, only one round will be conducted in August 2013. There is a possibility of increasing the frequency of PT rounds in the future.

## THE PROFICIENCY TESTING SCHEME PROCESS

The PT Scheme process will follow the work plan below:

ACTIVITY	RESPONSIBLE	PROPOSED DATE
Announcement/ Invitations to all former SADC MET participants to participate	BOBS	30th April 2013
Registration of participating labs	BOBS	31 <sup>st</sup> May 2013
Payment by the participating labs to BOBS (150USD)	BOBS	Mid June 2013
Purchase of PT material	BOBS	Until beginning July 2013
Dispatch of samples and reporting template with unique identification of participating labs	BOBS	August 2013 (the earlier the better)
Receiving of results from participating labs sent back to BOBS	Participating labs	Three weeks after shipment date, latest by end of September 2013
Analysis and evaluation of the results; compilation of the evaluation report	BOBS / Dr K. Luden (PT Facilitator)	End of October, beginning November 2013
Presentation of final results at the evaluation workshop (parallel workshop on chemical parameters)	BOBS	During week 11-15 November 2013

## EVALUATION OF PERFORMANCE

Evaluation of performance is conducted through the use of parametric statistics (mean and Standard Deviation (SD) to calculate Z-scores.

The following formula is normally used to calculate z-score for individual parameters:

$$Z = (X_i - \bar{x}) / s$$

Where, **Z** = z-score

**X<sub>i</sub>** = reported value of analyte quantities in test sample

**x** = assigned value (mean of all values, excluding outliers)

**s** = the target value for SD.





For the evaluation of laboratory performance using the z-score, the following criterion is used:

Z = -1.99 to +1.99	Satisfactory
Z = -2.00 to -2.99 or +2.00 to +2.99	Questionable
Z = < -3.00 to >+3.00	Unsatisfactory

### **PARTICIPATION FEES**

The participation fee for one round in a year is One Hundred and Fifty US Dollars (USD150.00)

Samples will be dispatched to participating labs in August 2013. The exact dates will be communicated to the labs prior to the dispatch.

### **FEEDBACK TO LABORATORIES**

Laboratories are issued with preliminary report one week after the date of submission for confirmation of data captured, and for timely corrective action, if necessary. The final report is issued within a month after issuance of a preliminary report.

### **EVALUATION WORKSHOP**

The Evaluation Workshop for the PT will be conducted during the week of 11-15 November 2013. Details of the workshop will be provided to laboratories during the course of the year.

### **PT PROVIDER CONTACT DETAILS**

Any specific details required about the scheme can be availed through the PT Provider on the following contact details:

#### **Ms Pinkie Malebe**

Botswana Bureau of Standard

Plot 55745, Main Airport Road

Gaborone

Botswana

Tel: +267 390 3200

Direct: +267 364 5727

Fax: +267 391 0597

Email: [malebe@bobstandards.bw](mailto:malebe@bobstandards.bw)

[www.bobstandards.bw](http://www.bobstandards.bw)



# TANZANIA BUREAU OF STANDARDS (TBS)



## WORKSHOP REPORT

### NATIONAL WORKSHOP ON QUALITY ASSURANCE AND COMPETENCE IN TESTING LABORATORIES 18 – 22 March 2013



*Blue Pearl Hotel, Dar es Salaam*

#### 1. BACKGROUND

Capacity building and mutual help between laboratories are the keys to improvement. In the evaluation workshops taking place yearly after each Southern African Development Cooperation in Measurement (SADCMET) and East African Community (EAC) Proficiency Testing (PT) rounds, training on quality assurance and quality control procedures is a very important topic. Since this covers only a few laboratories as it is not possible for all laboratories to attend these meetings, training for trainers was organized in Livingstone, Zambia, in 2010. Twenty eight participants from 14 countries were trained on all aspects of quality assurance in analytical chemistry with the aim to enable these trainers to conduct national workshops on these topics in their respective countries and therefore attain sustainability.

Previously, a consultant from Germany, supported by the German National Metrology Institute (PTB) would conduct the training.

This workshop is part of responsibility of Training of Trainer (TOT) trained personnel in Tanzania to impart knowledge to laboratory staff in order to improve their competence and therefore assured quality results.

From 18<sup>th</sup> to 22<sup>nd</sup> March, 2013, Tanzania Bureau of Standards (TBS) in collaboration with PTB, organized and hosted a National Workshop on Quality Assurance and Competence in Testing Laboratories at the Blue Pearl Hotel in Dar es Salaam. The workshop, based on ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*, intended to build competence in personnel of testing laboratories of all types including food, chemistry, mining, materials testing, textile and medical. During the five-day workshop different topics were covered including: Introduction to ISO/IEC 17025, calibration of analytical methods, control chart a quality control tool in testing laboratories, method validation and principles of estimation of measurement uncertainties.

The workshop was attended by 32 participants including managers, analysts, engineers and technicians, from various organizations (**Annex A**). The workshop was conducted by local resource persons namely Mrs Kezia Mbwambo from Tanzania Bureau of Standards (TBS), Mr. Dunstan Hipolite from Tanzania Food and Drugs Authority (TFDA) and Ms Victoria Stephen from Tanzania Bureau of Standards (TBS).

## 2. OPENING

The workshop was officially opened by the Acting Director General of Tanzania Bureau of Standards, Mr. Joseph Masikitiko. In the speech which was read on his behalf, Mr. Masikitiko emphasized the importance of laboratory competence in ensuring results' reliability and fitness for purpose. He called upon laboratory experts in Tanzania to embrace competence in order to produce correct and reliable results from their laboratories to justify customers' trust.

Mr. Masikitiko further noted that the cost of carrying out an analytical measurement is high and additional costs may rise from decisions made on the basis of incorrect test results. He thus stresses the importance for laboratory personnel to be able to determine the correct test results and to show that they are actually correct. Finally, the Acting Director General expressed his optimism that the workshop would assist in addressing the challenges facing laboratory competence in the country.

## 3. SESSIONS

### 3.1 Day 1

In Day One, the participants were introduced to ISO/IEC 17025:2005, General requirements for the competence of testing and calibration laboratories as the standard that identifies the high technical competence and management system requirements that guarantee that laboratory test results and calibrations are consistently accurate. They were also enlightened on the relationship between ISO/IEC 17025 and ISO 9001:2008, Quality management systems — Requirements. During the session, the participants were involved through discussions and exercises.

### 3.2 Day 2

Day Two topic was Calibration of Analytical Methods. Participants learnt what calibration is all about, its aims and its steps. They were further enlightened on calibration function of analytical method, preparation of the standard samples, calibration strategies in routine analysis and specification of measurement process, just to mention some important areas. In this participatory session, participants had opportunities to contribute through discussions and exercises. The day ended with exercise reporting.

### 3.3 Day 3

Day Three was about Control Charts. Participants were taught that control charts are techniques used for control of routine analyses and that ISO/IEC 17025 requires the use of control charts where practicable. The participants learnt about different control charts and their benefits, trend which can be identified from control charts and control samples in analytical chemistry. They were also engaged in the practical part of it through exercises and case studies on use of different tools for control charts.



### 3.4 Day 4

The theme for Day Four was Validation of Analytical Methods. Participants were enlightened on method validation in the framework of ISO/IEC 17025, statistics used in validation and quality control and calculation of validation parameters. The participants were also involved in real method validation through exercises and case studies.

### 3.5 Day 5

Measurement Uncertainty was the topic for Day 5 of the workshop. Participants learnt the meaning of measurement uncertainty, its importance and its implication on test results. They further learnt measurement uncertainty estimation process, calculation and expression. They also had an opportunity to participate through discussions



Participants of the National Workshop on Quality Assurance and Competence in Testing Laboratories in a group discussion

## 4. WORKSHOP EVALUATION

The participants completed the workshop evaluation form. The outcome of the evaluation, as well as the discussions that took place in the closing session indicated that the stated objectives for the course were fully met.

**Some of the recommendations given by participants are as follows:**

- a) More days are needed for such workshops to allow for more time for presentation, discussion, exercises and site visits.
- b) Presentations should be available in softcopies, too.
- c) Tanzania Bureau of Standards (TBS) should facilitate the accreditation of laboratories in the country.
- d) Laboratories top managements should be invited to attend such workshops to build commitment for easier implementation of ISO/IEC 17025.
- e) More such workshops should be held in other regions throughout Tanzania.
- f) There should be training on auditing.
- g) There is a need for more training in method validation and measurement uncertainty.
- h) An advanced course should be organized for participants.
- i) Follow-up should be made to ensure that the participants implement ISO/IEC 17025.
- j) Future programs should include use of instruments such as HPLC, GC, GLC, AAS, etc.

# ZIMBABWE NATIONAL CO-ORDINATOR FIRST QUARTER TRAINING REPORT

## INTRODUCTION:

The training for trainers was organized in Livingstone, Zambia, in 2010. Twenty eight participants from 14 countries were trained on all aspects of quality assurance in analytical chemistry with the aim to enable these trainers to conduct national workshops on these topics in their respective countries and therefore attain sustainability. It was also made possible for countries to request for trainers from other countries where expertise was not available in that country.

It was agreed that quarterly reports on training activities shall be submitted to the WG Secretary. The report shall contain:

- a. Training of any activity regarding Quality Assurance in Testing in the country (not necessarily by TOT trained persons in Livingstone but trained through other initiatives)
- b. Topics
- c. Number of participants
- d. Any other relevant information
- e. Any challenge/Gap

## COURSES CONDUCTED IN ZIMBABWE IN THE FIRST QUARTER, 2013

1. **ISO / IEC 17025 Development & Implementation by Corporate Quality Systems at Central Veterinary Laboratory (CVL), from 22 to 25 January, 2013.**

**Facilitator:** Mrs R. Ries  
**Number of participants:** 27  
**Cost per participant:** US \$ 180

2. **ISO / IEC 17025 Development & Implementation by SADCAS at Rainbow Towers, Harare from 25 February to 1 March, 2013.**

This course was fully sponsored by SADCAS, after an earlier one day ISO / IEC 17025 Awareness course in November 2012, which they also sponsored fully.

**Facilitator:** Mrs W. Makaya (for SADCAS)  
**Number of participants:** 30  
**Target group:** Personnel from food and agricultural organizations

3. **Measurement Uncertainty Course by Nissi & Global of South Africa at Cresta Oasis, from 8 to 10 April, 2013.**

**Facilitator:** Mrs N. Mandizha (on behalf of Nissi & Global)  
**Number of participants:** 6  
**Cost per participant:** US \$ 630

**Challenge:** The cost, hence the low number of participants.

