Workshop on SPS Capacity Building in Africa to Mitigate the Harmful Effects of Pesticide Residues in Cocoa and to Maintain Market Access
10 – 13 DECEMBER 2013

Tackling the SPS Challenges in Cocoa by building capacity in testing laboratories and their accreditation

Marcel GBAGUIDI
Expert in Quality Management Systems for Accreditation and Conformity Assessment Bodies
Contents

- The link between Cocoa Value Chain & quality infrastructure
- Building capacity in testing laboratories in West Africa
- UNIDO Approach for sustainability of accreditation
- Food Safety and QI activities/Projects on going at UNIDO
The link between Cocoa Value Chain & quality infrastructure
Targeted value-chains improve their quality and export competitiveness by complying with international standards.

The national quality system is improved to provide world class conformity assessment services (standardization, inspection, certification and testing)
Quality Assurance Infrastructure

Value Chain: Producers / Exporters / Consumers

Public

International Governance

Legal Framework

Institutions

Public and/or Private

Services

Calibration

Testing

Inspection

Certification

Metrology

Accreditation

Standards

Metrology Institute

Accreditation Board

Standards Body

Chemical

Microbiological

Pesticide Residues

Etc.

Volume

Temperature

Mass

Etc.

Testing Services

Competent Authorities

Products

Processes

Source: UNIDO
Building capacity in testing laboratories in West Africa
ILAC /IAF motto:
Tested once, accepted everywhere
Regional Quality Program (Phase 1)
UEMOA 2001-2005
[EUR 14 millions]

West Africa Quality Program: (phase 2)
Support to Competitiveness and Harmonisation of TBT & SPS Measures
UEMOA + ECOWAS+ Mauritania 2007-2012
[EUR 16.9 millions]
Strategic level: 1 QUALITY POLICIES

Operational levels: 2 QUALITY INFRASTRUCTURE 3 QUALITY PROMOTION
WAQP:
QMS IMPLEMENTATION IN LABORATORIES TO REACH ACCREDITATION
Capacities Building: Round of technical workshops

ISO 17025 requirements trainings

Training on documentary systems deployment

Training on metrology for testing laboratories

Training on uncertainty of measurement

Training on the scope of accreditation with technical experts

Training on internal quality audit

Equipment

Supply of advanced analytical equipment (HPLC, GC, SAA, etc.) during phase 1 (2001 – 2005)

Complementary equipments of metrology (mass & temperature)

Ensure traceability of these metrology equipments to the international system of measurement (calibration in accredited metrology labs)
Preparing final accreditation assessment

Mock audit by international experts supported by local quality & technical assessors

Preliminary visits & accreditation assessment by accreditation bodies ILAC MRA signatories.
Key success factors

Top management commitment
Encourage strong commitment of labs managers for QMS as they’re responsible for the provision of means

National quality audit program
Support the building of national capacities in quality audit by realizing crossed audits between laboratories

On site monitoring
Periodic visits in the labs: TCU, experts, NSC, NTC, etc. / report by head of labs of the level of the QMS deployment during NSC meetings

Monitoring tools
Standard model reports for international and national experts to facilitate the chain of supervision & reporting
Embedment of expertise at national level
Systematic twining team (national and international experts)

Metrology training
Without accredited metrology labs at national level, support for internalization of metrology function in the testing lab

National / regional expertise
Inventory of all existing accredited laboratories and selection of consultants foremost in these laboratories

Accreditation assessment preparation
Preliminary visits by ILAC MRA Accreditation bodies

Key success factors
Strengthening credible laboratories analytical skills in West Africa: WAQP Impacts

Accredited laboratories: field of activities Caption

- Medical testing
- Metrology
- Food testing
- Building Materials testing
- Drug testing
- Animal Genetic testing
- Cotton fiber testing

Map showing the location of laboratories in West Africa.
Strengthening credible laboratories analytical skills in West Africa: WAQP Impacts

Accredited laboratories: field of activities

- Medical testing
- Metrology
- Food testing
- Building Materials testing
- Drug testing
- Animal Genetic testing
- Petroleum products testing
- Cotton fiber testing

Technical or financial support for laboratories accreditation:

- Other Programs or laboratories own funds
- West Africa Quality Program
Strengthening credible laboratories analytical skills in West Africa: involvement of private and public sector

Accredited laboratories: distribution between private & public sector

- Public sector
- Private sector

Technical or financial support for laboratories accreditation
- West Africa Quality Program
- Other Programs or laboratories own funds

Type of activity sector

- Public sector
- Private sector
**Expected Results:**
18 laboratories accredited in the region

**Actions lever**

- Laboratories selection process
- Targeting support to be delivered
- Preparation for Accreditation final assessment

**Achievements**

- 110 laboratories selected to be supported by the WAQP
- About 40 laboratories supported for accreditation (ISO 17025 / ISO 15189) and the others for QMS implementation
- 36 laboratories pre assessed
- 21 laboratories accredited
Laboratory support: summary of results

Pre assessed: 36

Assessed by MRA/MLA signatories ABs: 22

Accredited: 21
SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Aflatoxins in Baby Food using HPLC AOAC Official Method 2006.16
Aflatoxins in Cereals using HPLC AOAC Official Method 999.07
Aflatoxins in Peanuts using HPLC EN 14123:2008
Pesticide Residues in Cereal and Flour, QuEchERs Method EN 15662
ANNEXE TECHNIQUE
à l'attestation N° 1-5136

L'accréditation concerne les prestations réalisées par :

Centre Régional de Recherches en Ecotoxicologie et Sécurité Environnementale
BP 3300
KM 15 - Route de Rufisque
DAKAR
SENEGAL

Elle porte sur :

UNITÉ TECHNIQUE : LABORATOIRE DE CHIMIE ENVIRONNEMENTALE

<table>
<thead>
<tr>
<th>OBJET</th>
<th>CARACTÉRISTIQUE MESURÉE OU RECHERCHEE</th>
<th>PRINCIPE DE LA METHODE</th>
<th>RÉFÉRENCE DE LA METHODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produits riches en eau et riches en chlorophylle</td>
<td>Résidus de pesticides : Bifenthrine, lindane, chlorpyriphos éthyle</td>
<td>Extraction : Par solvant à froid Purification : SPE dispersive Analyse : GC/MS</td>
<td>NF EN 15662 Méthode Quechers</td>
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Date de prise d'effet : 01/03/2013    Date de fin de validité : 28/02/2017

La Responsable d'Accréditation Pilote
The Pilot Accreditation Manager

Mélanie HUSSET
Programme de Prévention de la Contamination par l’Ochratoxine A en Côte d’Ivoire

Objective: Secure the cocoa and coffee export to the EU market
  ➔ Avoid SPS rejection by maintaining OTA contamination level below acceptable limits.

Beneficiaries: Coffee and cocoa supply chain actors in IVC

Start: April 2007  Length: 3 years

Targeted group of poor: Producers/small buyers/small traders but integrated in their economic environment: the supply-chain.

Actions:

Scientific studies to determine:
- Contamination level: national wide;
- Critical contamination points: from the field to the boat;
- Sampling procedures: national plan tested and validated.

Laboratories upgrading

Training on techniques to avoid OTA contamination

Negotiations with EU services and Codex

Measurements of outcomes: Contamination level of coffee and cocoa below rejection limits
Programme de Prévention de la Contamination par l’Ochratoxine A en Côte d’Ivoire

Assumptions/risks to reach outcomes

Actors ability to understand the problem and the concept of mycotoxin contamination

Actors willingness to adapt working procedures for higher quality without premium

No added-value for the country as raw material is still exported: status quo for the poorest?

Risks management

1. Training material and extension techniques for adult education suitable for illiterate: developed with supply-chain representatives and in-situ testing for optimal results.

2. Incorporate international exporters/buyers to some trainings for them to realize that a decline in quality might be irrevocable if quality doesn’t pay.

3. According to an Int. producers of chocolate: “Quality is the first step to add value in the country… together with political stability and adapted infrastructure”

One-UNIDO: way-to

⇒ 1. Securing the quality of the production: food safety & ensuring the sustainability

⇒ 2. Work with private companies on Community development Upgrading

⇒ 3. Upgrading and quality approach extended to cluster approach

SPS trouble
**Broader geographical coverage and up-scaling**

### Mycotoxin contamination

- **Ochratoxin:**
  - Cocoa: Ghana, Indonesia, Nigeria, etc.;
  - Coffee: Brazil, Vietnam, Colombia, Indonesia, Mexico, Ethiopia, Uganda, etc;
  - Spices: new requirements for the EU;
  - Aflatoxin: Groundnuts, Almonds, Cashew, Hazelnuts, Pistachios, Dried figs, Milk and Spices.

- **Pesticide residues:**
  - Pears from Turkey, EPN in fruit and vegetable from Thaïland, Vietnam, etc.
  - Laboratories accredited in Africa: Côte d’Ivoire, Ghana, Nigeria and Senegal.

- **Pathogenic micro-organism and heavy metals:**
  - Fish
  - Fruit and Vegetable
  - EU countries and EU Commission mainly
  - but USA is having the same problem: in house and with importing countries: possible interest?
UNIDO Approach for sustainability of accreditation in West Africa
**CONSTRAINTS**

- High Calibration costs
- High Accreditation fees
- Lack of Proficiency testing providers
- Reagents & maintenance

**UNIDO APPROACH**

- Support of calibration labs
- Regional & national accreditation system
- UEMOA Food Proficiency testing organizer (UNIDO – EDES – COLEACP partnership)
- Local & regional networking
Setting up a Regional Accreditation Body: SOAC

Expected results:
The West Africa Accreditation System (SOAC) is operational; Regional expertise strengthened for Regional accreditation scheme

Actions lever

- Strategic orientations
- International Partnership
- Assessors, technical experts & Accreditation Committees

Achievements

- Principle of a Regional Accreditation System adopted in the ECOWAS Quality Policy
- SOAC business plan drafted
- Partnership agreement between WAQP and TUNAC
- MoU between Cofrac and UEMOA reactivated / Participation to AFRAC meetings
- 7 quality assessors and 19 technical assessors trained with Cofrac and TUNAC support; 26 technical experts trained by assessors working for ABs
- 34 experts selected as members of 2 accreditation committees
SOAC: Two accreditation committees selected experts: breakdown by country and by educational degree

**Food testing Committee**

- Bénin: 2
- Burkina Faso: 3
- Côte d'Ivoire: 2
- Mali: 1
- Niger: 2
- Senegal: 6
- Togo: 2
- Total candidatures...: 53
- Total candidatures reçues: 18

**Biomedical testing Committee**

- Bénin: 3
- Burkina Faso: 4
- Côte d'Ivoire: 2
- Senegal: 4
- Togo: 3
- Total candidatures sélectionnées...: 16
- Total candidatures reçues: 30

**Educational Degrees**

- Professeur d'Université
- Maitre de Conférence
- Dr d'université
- DEA
- Dr Pharmacie / médecine vétérinaire
- Ingénieur / Master
Existing accreditation bodies in Africa (non-exhaustive list)

Accreditation basic principles

No competition
1 AB per country or for a group of countries
Non profit organisms to ensure impartiality and quality

Ghana & Nigeria: Willingness to have their own accreditation bodies
The international accreditation scheme of CABs

Tested / certified once, accepted everywhere

CAB → Accreditation of CABS → Regional accreditation cooperations → International level

- CAB
- Accreditation of CABS
- Regional accreditation cooperations
- International level

These regional MLAs/MRAs are part of the worldwide ILAC and/or IAF recognition arrangements.

- Europe: EA MLA
- Asia-Pacific: APLAC/PAC MLA
- America: IAAC MLA
- Asia-Pacific / America: IAAC MLA, APLAC/PAC MLA
- Accreditation bodies not covered by any regional MLA

[Map showing the geographical distribution of CABs and their regional and international impact]
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<tr>
<th>Others fields of WAQP</th>
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<tr>
<td>Quality Policy</td>
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<tr>
<td>Metrology</td>
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<tr>
<td>Standardization</td>
</tr>
<tr>
<td>Quality promotion (support to enterprises, regional technical centers, Quality award / communication)</td>
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<tr>
<td>Product certification</td>
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<td>Inspection</td>
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On going Food Safety and QI activities / Projects at UNIDO
## UNIDO Trade Capacity Building: Technical Assistance

### Ongoing and Hard Pipelines - TCB

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<tr>
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<th>Donor</th>
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<tbody>
<tr>
<td>1 AFRIMETS – Phase 2</td>
<td>Norad</td>
</tr>
<tr>
<td>2 Achieving good governance and sustainability through Quality Policy formulation</td>
<td>Norad</td>
</tr>
<tr>
<td>4 EU SMAP Kenya</td>
<td>EU</td>
</tr>
<tr>
<td>5 EAC Phase II - Standards and Quality Infrastructure on Renewable Energy</td>
<td>Norad</td>
</tr>
<tr>
<td>6 EIF Guinea</td>
<td>EIF</td>
</tr>
<tr>
<td>7 National Testing Center for heat equipment (heat exchangers and boilers)</td>
<td>China</td>
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<tr>
<td>8 Nigeria Metrology Institute</td>
<td>Gov. of Nigeria</td>
</tr>
<tr>
<td>9 West Africa Quality Programme (WAQP) Programme - Phase 3</td>
<td>EU</td>
</tr>
<tr>
<td>10 Nigeria Quality Infrastructure Programme</td>
<td>EU</td>
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UNIDO Director General LI Yong (L) of China and the President of the General Conference, Ambassador Ambassador Diego Stacey Moreno of Ecuador, after LI was confirmed in his post, in Vienna, 28 June 2013.

**Merci! Thank you! Obrigado!**
Questions, Comments ?