Standardization Programme for Apiculture

Development of African Standards for Honey and other Hive Products

3rd General Assembly of the African Apiculture Platform
21st - 23rd September 2016 Kigali, Rwanda

Reuben Gisore, Technical Director, ARSO
What ARSO is doing

Standardization in Africa
What ARSO is doing

i. Harmonization of African Standards for Products of significance to African economies

ii. Establishing a conformity assessment scheme to coordinate quality of African products in order to improve intra-African and global trade

iii. Operating Certification Schemes for Agriculture and Food Products (incl. Apiculture, Crops, Aquaculture, Livestock, Capture Fisheries), African Traditional Medicine and Eco-labelling of products meeting sustainability standards

iv. Running a consumers’ platform to ensure clear articulation of consumers’ interests in standardization work.

v. Establishing a documentation and information network for African countries to voluntarily share standardization and related documentation and information.

Standardization work

Premised on Article 49 of the AEC Treaty:

1) ARSO/THC 01, Basic and General Standards
2) **ARSO/THC 02, Agriculture and Food Products**
   1) **ARSO/THC 02-1, Working Group on Apiculture**
   2) **ARSO/THC 02-2, Working Group on Fisheries and Aquaculture**
3) ARSO/THC 03, Building and Civil Engineering
4) ARSO/THC 04, Mechanical Engineering & Metallurgy
5) **ARSO/THC 05, Chemical & Chemical Engineering**
6) ARSO/THC 06, Electro-technology
7) **ARSO/THC 07, Textiles and Leather**
8) ARSO/THC 08, Transport and Communication
9) **ARSO/THC 09, Environmental Management**
10) **ARSO/THC 10, Energy and Natural Resources**
11) ARSO/THC 11, Quality Management
12) **ARSO/THC 12, Services**
   1. **ARSO/THC 12-1 Cosmetology and Wellness**
   2. **ARSO/THC 12-2 Financial Services**
13) **ARSO/THC 13, African Traditional Medicine**
The Apiculture Standards were identified as part of the Business Plan for ARSO/THC 02, Agriculture and Food Products in the THC’s meeting in 2014.

Key items identified include:

i. Specifications for beehive products (honey, wax, pollen, propolis, royal jelly, bee venom)

ii. Specifications for bee infrastructure products: Beehives, stands, mobility

iii. Codes of practice: Good practices, conservation

iv. Certification schemes: Conventional, Organic, Sustainability
Key Constraints At National Level

- Resources to carry out technical work
- Limited extent of understanding the role of apiculture in the economy: employment, livelihoods, rural development, agricultural productivity (pollination), etc.
- Poor honey harvesting practices leading to high bee mortalities, contaminated honey
- Limited understanding of other important bee products
- Limited value addition to honey and other beehive products
- Limited specialty honeys e.g., Manuka, Eucalyptus, Aloe vera, Garlic, Cinnamon, Ginger, etc.
- Limited government support for apiculture: most African governments do not have national beekeeping policies – notable exceptions, e.g., Rwanda, Tanzania
- Limited quality infrastructure to support quality and conformity assessment
Lack of harmonized standards for product specification and conformity assessment
- Divergent standards
- Lack of mutual recognition
- Divergent product specifications
- Lack of coordination in diseases notifications as per OIE standards and codes
- Lack of understanding of the entire phenomenon of apiculture and appreciation of the ecosystem function of bees
Scope

- Part One applies to all honeys produced by honey bees and covers all styles of honey presentations which are processed and ultimately intended for direct consumption.

- Part Two covers honey for industrial uses or as an ingredient in other foods.
Honey sold as such shall not have added to it any food ingredient, including food additives, nor shall any other additions be made other than honey.

Honey shall not be heated or processed to such an extent that its essential composition is changed and/or its quality is impaired.

Chemical or biochemical treatments shall not be used to influence honey crystallization.
### Divergent Standards Requirements

<table>
<thead>
<tr>
<th>Country/Organ</th>
<th>Moisture content, %</th>
<th>Total reducing sugars %</th>
<th>Sucrose content, %</th>
<th>Acidity meq/kg</th>
<th>Mineral content, %</th>
<th>HMF</th>
<th>Diastase activity in Goethe scale#</th>
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<td>21</td>
<td>65</td>
<td>5</td>
<td>40</td>
<td>1</td>
<td>40</td>
<td>3-10</td>
</tr>
<tr>
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<td>65</td>
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<td>20</td>
<td>60</td>
<td>8</td>
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<td>0.25</td>
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<td>8</td>
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<tr>
<td>Argentina</td>
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<td>8</td>
<td>54</td>
<td>0.4</td>
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<tr>
<td>Mexico</td>
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<td>9</td>
<td>8-52</td>
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<td>African samples</td>
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<tr>
<td>range</td>
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<td>59-77</td>
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<td>17-95</td>
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<td><strong>6.0</strong></td>
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<td><strong>3.0</strong></td>
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</table>
## Pollination services

<table>
<thead>
<tr>
<th>CONTINENT</th>
<th>CROP</th>
<th>LOCATION/FARMING SYSTEMS</th>
<th>PRACTICES</th>
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<tbody>
<tr>
<td>Africa</td>
<td>Papaya</td>
<td>Kerio Valley, Kenya</td>
<td>Bomas, hedgerows, native plants and conserving male trees</td>
</tr>
<tr>
<td>Africa</td>
<td>Pigeon Pea</td>
<td>Mwanza district, Tanzania</td>
<td>Natural vegetation and traditional building materials provide resources for bees on-farm</td>
</tr>
<tr>
<td>Africa</td>
<td>Mango</td>
<td>Dodowa, Ghana</td>
<td>Selective weeding practices</td>
</tr>
<tr>
<td>Africa</td>
<td>Vanilla</td>
<td>Western Uganda</td>
<td>Benefits of natural habitat near farms</td>
</tr>
<tr>
<td>Africa</td>
<td>Coffee</td>
<td>Jimma, Ethiopia</td>
<td>Agroforestry cultivation</td>
</tr>
</tbody>
</table>
The decline of managed European honeybees in North America and Europe and the reliance on this one species for crop pollination resulted in lower yields of almonds in the United States. This happened because there were not enough managed honeybees to fulfill the pollination needs and populations of wild pollinators had decreased due to habitat loss and pesticides.

This serves as an important lesson for sustainable agriculture and emphasizes the need to conserve wild pollinators.
Issues and Gaps

- In tropical Africa, the few wild bees left for pollination are being burnt to death every day.

- Their natural habitats in trees are being destroyed.

- In most African countries, people are looking on unconcerned with no programme to replace the trees and rehabilitate the bees.

- As a farmer in Africa, you should consider employing honeybees just as labourers are employed on your farm. You should make sure that you have enough bees on your farm for adequate pollination, and this can best be done when you get involved in beekeeping. By doing so, you will harvest honey and wax in addition to enjoying better crop yields.
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http://www.arso-disnet.org/
ARSO DISNET

- ARSO Documentation and Information Systems Network abbreviated as ARSO DISNET
- Provides a platform for networking, cooperation, and partnerships, capacity Building
- Operates within the ARSO Strategic Objective 2: Disseminate harmonized standards and guidelines to support intra, inter African and international trade and industrialization.
It is a tool to aid trade activities among African Countries.

Access to information on product-related technical requirements is critical for facilitating trade.

Supported by PTB-Germany and ACP-EU TBT Programme.
Africa Trade Web Portal

Welcome to the African Trade Web Portal!!!

The African Trade Web Portal is a tool to aid trade activities among African Countries by the African Organisation for Standardisation (ARSO).

This is a support programme and policy initiative which is aimed at the development of national and international information systems which will provide global knowledge on trade related issues and ways in which to facilitate free flow of goods due to the readily provided information in this System.

Eventually creating an information-driven society.

More information on the Helpdesk [click here]

URL: http://trade.arso-disnet.org
The ARSO DISNET platform (web portal) is already in place but used not fully and not yet able to connect farmers with each other and market requirements in a virtual space for greater access to market information, market linkages to improve their productivity and profits as well as connect farmers to food purchasers by displaying real-time market prices and localizations.

Providing exporters in African countries seeking international markets with appropriate market, product and technology-related information.
So, the project on ARSO Dissemination of information and creation of awareness on African Agricultural Standards and Conformity Assessment with ACP-EU TBT Programme to upgrade the ARSO African Trade Web Portal by uploading new information in order to serve as a source of information for the prioritization of harmonization of African standards.

The deployment of an electronic platform and the availability of harmonised and codified standards accessible via user-friendly search engine would help in the uptake of the standards for the revolution of their agricultural production.

http://www.arso-disnet.org/
Benchmarking Platforms

Typically a few select members:

(i) Government Lead Agency/Regulatory Authority
(ii) Manufacturers, producers or service providers
(iii) Major corporate consumers.
(iv) University, Research and other Technical Institutions
(v) Industry Association
(vi) Trade Association
(vii) Professional Body
(viii) Consumer Organization
(ix) Non Governmental Organization, (NGO)
(x) Renown Professionals/experts
Typically all Member States are obligated to provide input in the standards by the Treaty, Protocols or Regional Laws.

Member States obligated to adopt REC standards and withdraw national standards of similar scope and purpose to avoid parallel use of standards which might give rise to Technical Barriers to Trade.

What is the current status in ECOWAS?
The EU has 28 Member States

Standardization work in the EU starts when 5 or more Members expressed commitment to participate

http://boss.cen.eu/startingnewwork/propnewwork/Pages/default.aspx

The completed standard is nevertheless a European standard to be implemented by all the 28 EU Member States
Currently, 36 African countries participate in ARSO work.

ARSO is an African intergovernmental body established in 1977 by African governments and any African country can become a member by accession and subscription to its operations.

An ARSO Committee is considered to be duly constituted when six (6) countries have indicated full participation.

Standardization projects are considered validly justified when 3 Member States have committed to participate and implement the standard which becomes an African Standard upon completion.
ISO currently has 161 national standards bodies as its members

No ISO TC has all 161 NSBs participating

Standardization work at ISO starts when 5 or more Members expressed commitment to participate

ISO/IEC Directives Part 1; 1.5.7

The completed standard is nevertheless an International Standard!!

Typically, the map and figure hereafter show the dominant voice (ideas) the International Standards convey.
International Standardization: Whose Voice?

Map showing regions:
- NORTH AMERICA
- SOUTH AMERICA
- ASIA
- EUROPE
- AFRICA
- AUSTRALIA

Legend:
- Core
- Semiperiphery
- Periphery

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Africa’s Standardization: Where we Stand

Wallerstein's World System Theory Model

- Core
  - High Profit Consumption Goods
- Semi-Periphery
- Periphery
  - Cheap Labor and Raw Materials
1. WD-ARS 1401:2016, *Crude and refined beeswax — Specification*
2. WD-ARS 1402:2016, *Beehives — Specification*
4. WD-ARS 1404:2016, *Folding and fixed beehive stands — Specifications*
7. WD-ARS 1408:2016, *Layout for honey processing plant*
8. WD-ARS 1409:2016, *Comb foundation mill — Specification*
11. WD-ARS 1412:2016, *Conservation and maintenance of honeybees*
17. WD–ARS 1418:2016, *Honey processing unit — Technical requirements*
19. WD–ARS 1420:2016, *Sustainability criteria for beekeeping and bee products*
20. WD–ARS 1421:2016, *Bee pollination services — Requirements and guidelines*
22. WD–ARS 1423:2016, *Propolis, pollen and bee venom — Specifications*
Support Infrastructure

Extension services in beekeeping
(1) Basic trainings on beekeeping.
(2) Trainings on scientific beekeeping
(3) Specialized Trainings on beekeeping
   i. Trainings on production of high value beehive products viz., royal jelly, bee-pollen, propolis, bee wax, bee venom.
   ii. Training on mass queen bees rearing.
   iii. Trainings on artificial insemination of queen bees.
   iv. Trainings on apitherapy.
(4) Trainings on post-harvest management of beehive products.
<table>
<thead>
<tr>
<th>Chairperson</th>
<th>Tanzania (Masoud H. Muruke, PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Botswana</td>
<td>Mrs. Queen Turner</td>
</tr>
<tr>
<td>2. Burkina Faso</td>
<td>Mr. Jacques KOIDIMA</td>
</tr>
<tr>
<td>3. Cameroon</td>
<td>Dr. MFOPOU MEWOOUO Yuette Clarisse</td>
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<td>4. Côte d’Ivoire</td>
<td>Ms. GNANDJI ADJO DANIELLE PATRICIA</td>
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<td>5. Ethiopia</td>
<td>Mr. Tuji Yishehak Assefa</td>
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<td>6. Gabon</td>
<td>Fabrice ADANDE MENEST</td>
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<td>7. Ghana</td>
<td>Mac Carthy Jacob Wayo</td>
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<td>8. Kenya</td>
<td>Mr. Wangai Moses Mwangi</td>
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<td>9. Mauritius</td>
<td>Dr Preeaduth Sookar</td>
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<tr>
<td>10. Nigeria</td>
<td>Mr. UDOM, Udeme David</td>
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<td>11. Rwanda</td>
<td>Mr. Jerome Ndahimana</td>
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<tr>
<td>12. Senegal</td>
<td>Mr DIAWARA Ibrahima</td>
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<td>13. South Africa</td>
<td>Mr. Marchand Jean Dominique</td>
</tr>
<tr>
<td>14. Sudan</td>
<td>Dr. Suha Osman Ahmed Osmanq</td>
</tr>
<tr>
<td>15. Tanzania</td>
<td>Ms. Mhahilidza Rhoda Saimon</td>
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<tr>
<td>16. Uganda</td>
<td>Mr. Bosco Okello</td>
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<td>17. Zambia</td>
<td>Mr. Hamweenda Ackim Norman</td>
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<td>Ms Jacqueline Gowe</td>
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<td>19. Egypt?</td>
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<tr>
<td>20. Madagascar?</td>
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The e-Standardization Platform

ARSO MicroSoft SharePoint

http://thc03.arso-disnet.org/sites/Apiculture/_layouts/15/start.aspx#/SitePages/Home.aspx
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<th>Stage</th>
<th>Description</th>
<th>Timing</th>
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<td>Preliminary Work Item (PWI)</td>
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<tr>
<td>1</td>
<td>Proposal Stage</td>
<td>New Work Item Proposal (NWIP)</td>
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<tr>
<td>2</td>
<td>Preparatory Stage</td>
<td>Working Drafts (WD)</td>
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<td>Committee Drafts (CD): Meeting</td>
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<td>5</td>
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<td>Final Draft African Standard (FDARS)</td>
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<td>6</td>
<td>Approval Stage</td>
<td>African Standard (DARS)</td>
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</table>
Thank you!

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