39 Hints to Facilitate the Use of Semantics for Data on Agriculture the Nutrition

FAO Adoption story

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RDA Global Adoption Week
Online, June 17, 2020
UN agency, goal is food security. [http://www.fao.org/](http://www.fao.org/)

- Activities on policy, data
- HQ in Rome, offices in 130 countries

- FAO in RDA:
  - Agricultural Data IG (IGAD)
  - Agrisemantics WG
  - Fisheries Data Interoperability WG
  - Wheat Data WG
Agrisemantics WG

The challenge: Semantic data interoperability

Output focuses on:
• Tools: generic web framework for collaborative work with semantic resources
• Use (and reuse) of semantic resources
• Adoption of standards

• ..across the entire lifecycle
• ..considering all user profiles involved

RDA Adoption Week, 17 June 2020

http://stats-class.fao.uniroma2.it/caliper/
Why Agrisemantics is relevant to ag. statistics

Statistical data heavily relies on classifications for their collection, use, analysis, integration.

But they are still largely treated “ad-hoc”. Ultimately, interoperability is hampered.

Agrisemantics recommendations offer a comprehensive view on how to make it better
## Statistical classifications in practice

- **Meeting/Workshop title**: Statistical classifications in practice

### Table: Classification Examples

<table>
<thead>
<tr>
<th>Domain Code</th>
<th>Domain</th>
<th>Area Code</th>
<th>Area</th>
<th>Element Code</th>
<th>Element</th>
<th>Item Code</th>
<th>Item</th>
<th>Year Code</th>
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<td>15</td>
<td>Wheat</td>
<td>2018</td>
<td>2018</td>
</tr>
</tbody>
</table>

### Additional Information:

- **Domain Code**: Characteristic indicating the domain of the classification.
- **Area Code**: Code identifying the area.
- **Area**: Name of the area.
- **Element Code**: Code indicating the element.
- **Element**: Type of the element.
- **Item Code**: Code identifying the item.
- **Item**: Name of the item.

### Links:

- [http://stats-class.fao.uniroma2.it/caliper](http://stats-class.fao.uniroma2.it/caliper)

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**http://stats-class.fao.uniroma2.it/caliper**
Because... Words are ambiguous, codes too

Turkey

1079
Caliper, a web platform dedicated to statistical classifications

http://stats-class.fao.uniroma2.it/caliper/

**Benefit to FAO**: Have a single platform to manage statistical classifications in open and interoperable formats; supporting maintenance, publication and use with statistical information system. Produce public goods.

Ultimate goal = have better statistics – more timely, of higher quality, better comparable

**Note**: The platform is not yet an official service of FAO. Data can be accessed and tested but should NOT be taken as reference.
Statistical Classifications in an Open Linked World

The timeliness and interoperability of agricultural statistics largely depend on the availability of classifications in usable and standard formats. Instead, they are often in formats that are hardly or not-machine readable (e.g., PDF), or information is scattered in different files (e.g., multilingual titles and correspondences), or metadata is not in structured formats.

The goal of this project is to address those limitations by applying open technologies for the web. We look at all phases in the life cycle of statistical classification:

- **Publication:**
  - classifications can be browsed and visualized in different ways. We use three tools: SKOSMOS, PMKI, and the content management system Drupal.

- **Use:**
  - download classifications in machine readable formats
  - query and extract specific pieces of classifications on demand
  - programmatic access classifications, via APIs, or through content negotiation of web addresses (URIs).

- **Editing:**
  - VocBench as a editing platform.

**CREDITS:** Caliper is part of a project run by the Food and Agriculture Organization of the UN (FAO) and supported by the Bill and Melinda Gates Foundation (BMGF). Vergata (Rome, Italy) provides technical and scientific support.

Credentials: “caliper”, “caliper”
Caliper is

An aggregator of resources

• Based on semantic technologies and open standards
• Serving data to humans and machines
1. Standard modelling and formats
   • Mostly, RDF-tech stack
   • SKOS, XKOS, URIs..

2. Reuse of common metadata models
   • DC, DCAT, VoID, for machine readability
   • Versioning and provenance information

3. A web-based platform
   • Addressing different users needs and roles
   • Open source tools and licenses
Some highlights
### Coverage

#### Caliper

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<thead>
<tr>
<th>Vocabulary Categories</th>
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**Meeting/Workshop title**

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**http://stats-class.fao.uniroma2.it/caliper/**
#1. Standard modelling and formats (URIs)

- [http://stats-class.fao.uniroma2.it/geo/m49/792](http://stats-class.fao.uniroma2.it/geo/m49/792)
#2. Common metadata models

Having in mind:

- machine interoperability
  - Dublin Core, DCAT, VoID, OWL provenance

- human credibility (!), to distinguish:
  - Author, version, etc of the classifications
  - Caliper as publisher of specific distributions
All open source:
  • Visualization: SKOSMOS, Drupal, PMKI
  • Editing: VocBench3
  • Services: Apache Jena Fuseki, GraphDB, Yasgui
  
  • Working towards a better integration of them, wrt
    • Data lifecycle
    • Users involved
Next: interoperability at a larger scale

Other classifications custodians and users

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Thank you!
Caterina Caracciolo: 
caterina.caracciolo@fao.org

Caliper: 
http://stats-class.fao.uniroma2.it/caliper/
credentials: caliper, caliper
Extra! Survey on adoption of Agrisemantics

**Prof. Chris Baker** and **Dr. Brett Drury** are conducting a comprehensive survey of attitudes and opinions about the current state of the art and adoption of Agrisemantics. They would like your opinions, and they would be grateful if you could complete a short questionnaire. See:


**Contact:** brett.drury@gmail.com