

AGROVOC | Editorial Meeting 2019

Version 1.0

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Food and Agriculture Organization of the United Nations

AGROVOC in 2019¶

AGROVOC is a multilingual thesaurus of over 36,400 concepts in all areas of interest to the Food and Agriculture Organization of the United Nations (FAO), from food, nutrition, and agriculture to fisheries, forestry, and the environment. AGROVOC is widely used in FAO services such as AGRIS² and by third-party digital libraries and repositories for content organization, indexing and tagging, text mining, and translation.

Originally developed in the 1980s as a printed thesaurus, AGROVOC was moved in 2000 into an online database. In 2010, AGROVOC was converted into a concept scheme³ based on the W3C Semantic Web thesaurus standard, Simple Knowledge Organization System (SKOS). Since 2018, AGROVOC has been available for re-use under the Linked Open Data license, Creative Commons Attribution 3.0 IGO⁴. As Dean Allemang writes⁵:

Vocabularies like AGROVOC play a special role in the data ecosystem. They provide touch points where multiple data sets can refer to the same thing, and anyone who reuses those data sets know, without reading through documentation or contacting the data set authors, that they refer to the same thing. They are key shared resources that allow other resources to interoperate.

AGROVOC can be searched and explored in a browser application, Skosmos⁶, or downloaded for local use⁷. AGROVOC is also accessible directly to applications through Skosmos REST APIs⁸, SOAP Web Services, and URI resolution or queryable via a SPARQL endpoint⁹. Single-language versions of AGROVOC can be made available in Excel on request. Monthly update releases are announced on an FAO blog¹⁰. AGROVOC has been partially aligned with over twenty other multilingual resources, such as the USDA National Agricultural Library Thesaurus¹¹, Chinese Agricultural Thesaurus¹², and EuroVoc¹³.

AGROVOC Editorial Meeting 2019

The AGROVOC team at FAO bears responsibility for maintaining AGROVOC in the six languages of FAO (English, French, Spanish, Arabic, Chinese, and Russian) and for coordinating all other contributions from the AGROVOC community of editors¹⁴, which encompasses the maintainers of AGROVOC language versions (see Appendix A) and communities of experts in specific domains (see Appendix B). This work is voluntary on the part of the institutions.

As of June 2019, AGROVOC is also available in Burmese, Czech, Danish, Dutch, Finnish, Georgian, German, Hindi, Hungarian, Italian, Japanese, Khmer, Korean, Lao, Malay, Norwegian Bokmål, Persian, Polish, Portuguese, Romanian, Slovak, Swahili, Swedish, Telugu, Thai, Turkish, Ukrainian, and Vietnamese. Language coverage varies, The framework is in place for regional variants of Spanish and Portuguese, as well as Albanian, Belarusian, Bulgarian, Catalan, Croatian, Estonian, Gaelic, Greek, Indonesian, Latvian, Lithuanian, Northern Sami, Norwegian Nynorsk, Serbian and Slovenian, pending identification of national editors.

The FAO team collaborates with the Artificial Intelligence Research group, University of Tor Vergata in Rome, on the use of a multi-user and multilingual editorial platform, VocBench, and on the publication of AGROVOC as a Linked Open Data resource.

Since 2018, the editorial community has met twice to consider new technical possibilities and set priorities for the further development of AGROVOC. A June 2018 meeting in Utrecht¹⁵ (The Netherlands), organized jointly with the Land Portal Foundation¹⁶, brought together 25 participants from 18 institutions in 14 countries to

review the status of editorial policies and prepare an upgrade of the VocBench platform. A June 2019 meeting¹⁷, hosted by the German Association for Technology and Structures in Agriculture (KTBL) in Darmstadt¹⁸ (Germany), brought together 33 editors and stakeholders from 16 countries and 13 language areas.

This year's meeting focused on improving support for AGROVOC editors in communities of experts. A new feature of VocBench, "multischeme", allows editors to define distinct subschemes, within AGROVOC, with the option of defining their own distinct, domain-specific hierarchies ("multihierarchy"). Multischeme capability enables expert communities to enrich AGROVOC as a whole while building their own specialized concept schemes. Two subschemes are currently under development – LandVoc¹⁹, a controlled vocabulary about land governance, and the FAO Aquatic Sciences and Fisheries Abstracts (ASFA) vocabulary²⁰ – with more in the pipeline. The AGROVOC thesaurus and related semantic services and protocols will be used to strengthen the classification system of the legislative and policy database FAOLEX and enhance its visibility, interoperability, and usability.

It was decided in Darmstadt to form a task force to resolve issues of editorial policy, subject to approval by the broader community of editors, and to revise the official AGROVOC editorial guidelines accordingly. The Task Force will formulate policies for handling regional variations in agricultural terminology and review the logical structure of AGROVOC – its hierarchical relations, custom associative relations, and term types – for consistency and usability. The task force will produce a shortened version of the editorial guidelines that can more easily be translated into multiple languages.

The community also discussed the need for capacity development, in the form of online courses and videos, aimed at helping information professionals maintain controlled vocabularies, integrate AGROVOC into local applications, and publish open data. Future meetings may examine how the use and maintenance of AGROVOC might benefit from mapping to Wikidata and from advances in software for semi-automated resource tagging, concept alignment, improved searching, voice recognition, and machine learning.

AGROVOC Community of Editors ¶

Feedback received from some, September 2019.

Brazil ¶

The Brazilian Agricultural Research Corporation (Embrapa) supports research and technological innovation for Brazilian and tropical agriculture. A controlled vocabulary, Agrotermos, is under development at Embrapa by a working group of nine staff members in agriculture, agricultural terminology, natural language processing, linguistics, and library science.

The Embrapa team uses AGROVOC for indexing their research repositories and curates AGROVOC in Brazilian Portuguese with the objective of improving the integration, visibility, and semantic interoperability of their work with global agricultural knowledge. For the coming year, they plan to integrate about 4,500 terms and concepts related to specific terminologies in Brazilian Portuguese.

Denmark ¶

The International Centre for Research in Organic Food Systems (ICROFS) in Denmark supports the development of a market-driven organic food sector in Denmark. The centre, located at Aarhus University in Foulum, Viborg,

supports research related to organic food by many different institutions and industries. ICROFS sees AGROVOC as a good source of multilingual keywords for its Eprints repository and wants to help expand AGROVOC's coverage of terminology for organic agriculture.

France ¶

The French Agricultural Research Centre for International Development (CIRAD) works for the sustainable development of tropical and Mediterranean regions with particular emphasis on agronomy, forest and wood research, the environment, genetics, animal health, zootechnics, and phytopathology. CIRAD, which has collaborated with FAO since 1986, uses AGROVOC in its AGRITROP database and annotates all research publications with AGROVOC terms and AGRIS codes.

Work on AGROVOC is carried in CIRAD by a working group of four people devoted to indexing and classification using AGROVOC, the AGRIS/CARIS Categorization Scheme and other controlled vocabularies. The team contributes French translations of AGROVOC concept labels in collaboration with French-speaking partners in the Global South and is particularly interested in enriching AGROVOC with terminology in areas of strategic interest to CIRAD such as forest and wood research. CIRAD is planning to test the use of AGROVOC within a text-mining application.

Germany ¶

The Kuratorium für Technik und Bauwesen in der Landwirtschaft e.V. (KTBL) provides data and information about new technologies in agriculture for the benefit of farmers, consultants, and decision makers. Circa three people from the Databases and Knowledge Technologies department at KTBL support the AGROVOC editorial work by contributing translations, concepts and by bringing in technical expertise where appropriate. KTBL delivers publications and software application on a multitude of agricultural topics, develops ontologies and edits several smaller, specific glossaries on machinery, bioenergy, climate protection and other topics. AGROVOC, as the most complete and elaborate multilingual vocabulary for agriculture, is seen as a crucial component for annotation and labeling within that context and thus a prerequisite for innovative information retrieval tools to be provided in the future. During the past year, KTBL fixed a number of issues with German translations in AGROVOC, with a large block of changes to be imported soon. KTBL also hosted the AGROVOC editors' meeting in June 2019. For the coming year, KTBL plans to add concepts related to agricultural machinery, an area of special expertise of KTBL.

ZALF, a research institute in Müncheberg, Germany, researches on topics such as sustainable management strategies, ecology, and soil science. It comments and cross-checks proposed changes from KTBL and provides new concepts that are required mainly for research dataset annotation. In the context of the BonaRes project, a large national project on "soil as a sustainable resource for the bioeconomy", a data repository for soil and agricultural research data has been set up under the leadership of ZALF. All incoming research data are described by the BonaRes Metadata Schema, which supports all DataCite and INSPIRE elements. The schema implements AGROVOC keyword annotations to improve data findability and an important part to fulfil modern FAIR data principles. As it was recognized, that soil concepts are incomplete and partly inadequate translated or classified, the BonaRes team started in 2019 internal reviews and discussions on existing and missing concepts to improve and extend AGROVOC. The AGROVOC editor and ZALF employee Carsten Hoffmann attended the two

editor workshops in Utrecht and Darmstadt; through Vocbench3, he has contributed improvements and extensions to the thesaurus on a quarterly basis. This work will be continued in the coming years.

Georgia¶

The Institute Techinformi of the Georgian Technical University is the largest provider of information services in Georgia. The institute collects, analyses, and disseminates scientific and technical information for the research and business communities, translates and publishes scientific papers, and organizes scientific events.

AGROVOC is used at the Institute Techinformi to index AGRIS and FAO Depository Library publications. The team contributing to AGROVOC, which meets once per week, consists of a liaison to experts and outside organizations, a translator, an editor, and three to five consultants. Over the past year, they have created or translated over 16,000 terms in Georgian.

In contributing to AGROVOC, the institute aims at ensuring the integration of Georgian agricultural information into global resources and promoting the correct use of terminology in Georgian language. They aim at improving AGROVOC's coverage of plants and animals endemic to Georgia and of Georgian agricultural products.

Iran¶

The Iranian Fisheries Science Research Institute, which serves as the partner in Iran of FAO's Aquatic Sciences and Fisheries Abstracts (ASFA), is expanding the coverage of AGROVOC in Farsi language, especially in the area of fisheries. AGROVOC is used extensively by research scientists as a source of Farsi equivalents to concepts found in the English-language literature. The work on AGROVOC is being done primarily by one scientist who, due to Internet bandwidth limitations, finds it more efficient to submit batch edits in the form of a spreadsheet. The institute plans to promote the use of AGROVOC among agricultural organizations and specialists over the coming year.

LandVoc¶

The Land Portal Foundation is a non-profit organization with a mission to build and strengthen an information ecosystem for land governance that supports better informed decision and policy making at national and international levels.

The team working on AGROVOC consists of three people with a mix of organizational, technical, and domain expertise. The team maintains LandVoc, a controlled vocabulary about land governance, as a subscheme of AGROVOC which, thanks to the new multischeme capability of the VocBench platform, can be published with its own domain-specific hierarchical structure. The past year has seen the translation of LandVoc into Kiswahili and the completion of a year-long expert consultation to determine this new hierarchy.

In the coming year, the team plans to implement the independent hierarchy for LandVoc; start a review of concepts specific to particular sectors such as cities, gender, and investment; translate the concepts into more languages; align with external vocabularies such as Eurovoc; and generally launch LandVoc as an unbranded product by and for the land community. Participation in the development of AGROVOC as a general standard, they believe, gives more weight to LandVoc in the land community, thus increasing the likelihood of its uptake.

Moldova¶

The Republican Scientific Agricultural Library of the State Agrarian University of Moldova (RSAL SAUM), a university library and national information and documentation center in agricultural sciences, curates the translation of AGROVOC into Romanian and integrates Romanian terminology into the global concept space.

The team working on AGROVOC currently consists of four editors who collaborate on translations as a group. Over the past year, they have added about 10,600 AGROVOC terms and scientific names in Latin to the Romanian AGROVOC. They aim at improving the indexing and retrieval of agricultural information in Moldova and at providing better resource discovery services by leveraging the rich linkages among concepts, synonyms, and term translations in AGROVOC.

For the coming year, in addition to expanding and improving the Romanian-language parts of AGROVOC, they propose to integrate AGROVOC objectives into the strategy of the State Agrarian University, release Romanian-language contributions to AGROVOC under an open license, and promote the use of AGROVOC through user training.

Russian Federation¶

Central Scientific Agricultural Library (CSAL) is the leading information center in the field of agriculture in the Russian Federation. CSAL has created a thesaurus on agriculture and food in Russian and maintains the Russian version of AGROVOC.

The team working on AGROVOC is comprised of five people – one coordinator plus several experts in specific fields of agriculture who use special terminology both in English and in Russian on a daily basis, drawing on other experts as needed.

The library uses AGROVOC for indexing AGRIS records and promotes its use as a tool for translators of agricultural literature. Over the past year, the team has added about 650 new concepts to AGROVOC from existing Russian thesauri, translated 250 labels, including Latin scientific names and Russian common names, and added more than 600 terms in both English and Russian in the area of agroengineering – an area they plan to further develop in the coming year.

Turkey¶

The Department of Education and Publication is affiliated to the Ministry of Agriculture and Forestry, and manages Turkish AGROVOC. The organization carries out activities related to agricultural training and extension, and printing. It broadcasts agricultural TV programming on the Web, and maintains a special library on agriculture. It has served since as the AGRIS Coordinating Center in Turkey since 1985.

Turkish AGROVOC was first published in 2012. It was prepared by a team of 17 domain experts. At that time it contained 30,000 concepts. Since then, one person has been contributing to AGROVOC. Currently, the Turkish AGROVOC is in first place in terms of the total number of terms compared to other languages. The main reason they contribute to AGROVOC is to ensure that it is represented in the Turkish language, to facilitate the work of librarians and to enrich the content as much as possible in the multilingual environment.

AGROVOC is used in the agricultural library for indexing of books, identifying topics, assigning keywords and data provision to AGRIS. In order to facilitate the work of librarians, the terms in AGROVOC have been installed

in the library automation program. Additionally, AGROVOC was put on the organizational Web page in order to make it available to agricultural researchers, and to ensure that it would be used as a multilingual dictionary considering it would be useful in translation activities. The Department of Education and Publication (Ministry of Agriculture and Forestry, Turkey) will continue to add new concepts and terms to AGROVOC. Their suggestions and contributions will help to eliminate conflicts and complexity in AGROVOC.

Ukraine ¶

The Ukrainian Institute of Scientific-Technical Expertise and Information (UkrINTEI), the primary source of scientific and technical information in Ukraine, has in the past served as the AGRIS Coordinating Centre in Ukraine. Tatiana Deribon, who over the past 24 years has edited or translated circa 15,000 concepts in AGROVOC, continues despite recent institutional changes to serve as the national AGRIS coordinator and to broaden the coverage of AGROVOC in the Ukrainian language.

Annex 1. Language version editors¶

| Country | Language | Concepts with preferred labels in language | Institution |
|---------------|------------|--|--|
| International | English | 36,475 | FAO |
| International | Arabic | 24,906 | FAO ICARDA |
| International | Spanish | 34,224 | FAO |
| Brazil | Portuguese | 32,180 | Embrapa |
| China | Chinese | 31,208 | Chinese Academy of Agricultural Sciences (CAAS) FAO |
| Czechia | Czech | 34,873 | Institute of Agricultural Economics and Information |
| Denmark | Danish | 190 | International Centre for Research in Organic Food Systems (ICROFS) |
| Iran | Persian | 19,565 | Iranian Fisheries Science Research Institute |
| France | French | 33,809 | CIRAD FAO |
| Georgia | Georgian | 14,423 | TECHINFORMI |
| Germany | German | 32,812 | Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V. (KTBL) |
| Hungary | Hungarian | 19,677 | Gödöllo Agribusiness Centre |
| India | Hindi | 19,904 | TBD |
| Italy | Italian | 25,085 | Biblioteca Storica Nazionale (MPAAF) |
| Japan | Japanese | 30,602 | AFFRIT |
| Korea | Korean | 12,673 | TBD |

| | | | |
|--------------------|-----------|--------|--|
| Laos | Lao | 17,096 | National Agriculture and Forestry Research Institute (NAFRI) |
| Moldova | Romanian | 15,311 | The Republican Scientific Agricultural Library, State Agrarian University |
| Poland | Polish | 19,899 | Centralna Biblioteka Rolnicza, Central Agricultural Library (AgroWeb Poland) |
| Russian Federation | Russian | 21,257 | Central Scientific Agricultural Library (CSAL) FAO |
| Slovakia | Slovakia | 18,992 | Agroinstitut Nitra |
| Thailand | Thai | 19,746 | Kasetsart University, Department of Computer Engineering Thai National AGRIS Centre, Kasetsart University |
| Turkey | Turkish | 36,236 | Department of Training, Extension and Publications, Ministry of Food Agriculture and Livestock |
| Ukraine | Ukrainian | 13,865 | Ukrainian Institute for Scientific, Technical and Economic Information |

Annex 2. Expert communities

| | |
|---------------------------|--|
| Agricultural technologies | FAO TECA - Technologies and Practices for Small Agricultural Producers |
| Fisheries | FAO ASFA |
| Land governance | Land Portal Foundation |
| Soil | BonaRes Project, Helmholtz Centre for Environmental Research (Germany) |

Links

1. <http://aims.fao.org/agrovoc/>
2. <http://agris.fao.org>
3. <http://aims.fao.org/standards/agrovoc/concept-scheme>
4. <https://creativecommons.org/licenses/by/3.0/igo/>
5. https://www.mitpressjournals.org/doi/full/10.1162/dint_a_00005
6. <http://agrovoc.uniroma2.it/agrovoc/agrovoc/en/>
7. <http://aims.fao.org/node/121112>
8. <http://aims.fao.org/agrovoc/webservices>
9. <http://agrovoc.uniroma2.it:3030/agrovoc/sparql>
10. <http://aims.fao.org/activity/blog>
11. <http://agclass.nal.usda.gov/>
12. <http://cat.aii.caas.cn/>
13. <https://publications.europa.eu/en/web/eu-vocabularies/th-dataset/-/resource/dataset/eurovoc>
14. <http://aims.fao.org/standards/agrovoc/community>
15. <http://aims.fao.org/activity/blog/achievements-impact-and-strategy-agrovoc%E2%80%99s-future>
16. <http://landportal.org/>
17. <http://aims.fao.org/activity/blog/agrovoc-editors-many-countries-convene-ktbl-darmstadt>
18. <https://www.ktbl.de/>
19. <http://explore.landvoc.org>
20. <http://agrovoc.uniroma2.it/skosmosAsfa/asfa/en/>