Food and Agriculture Organization
of the United Nations

AGROVOC

Linked Open Data in action

Partnerships and South-South Cooperation Division (DPS)
Food and Agriculture Organization of the United Nations (FAO)

The AGROVOC team of FAO

The AGROVOC team of FAO keeps AGROVOC up to date with a number of institutions and individual domain experts serving as focal points for specific languages or topics.

- Imma Subirats, FAO: AGROVOC manager, team leader
- Kristin Kolshus, FAO: AGROVOC content curator, editor community coordinator
- Andrea Turbati, ART Group, University of Tor Vergata: AGROVOC technical expert, infrastructure

agrovoc@fao.org

Outline

- About AGROVOC
- Languages and Editor community
- Open data, linked open data
- Linking thesauri, bibliographic records, data sets
- AGROVOC in action: AGRIS, CGIAR
- Subject coverage
- How to access AGROVOC

AGROVOC: multilingual thesaurus, controlled vocabulary, collaborative effort

AGROVOC is a **controlled vocabulary** covering all areas of interest of FAO of the UN, including food, nutrition, agriculture, fisheries, forestry, economics, environment, etc. It is published by FAO and edited by a community of experts.

AGROVOC is widely used in specialized libraries, digital libraries and repositories to index content and for text mining.

It is also used as a specialized tagging resource for content organization by FAO and third-party stakeholders.

AGROVOC Multilingual Thesaurus

Content language English Search

Alphabetical Hierarchy

A B C Ç D E F G H I J K L M N
O P Q R S Ş T U V W X Y Z 植
0-9

A horizons
Aaptosyax grypus
Aaron's rod → Verbascum
ABA
Abaca
abachi → Triplochiton scleroxylon
Abalistes stellaris
abalones
abamectin
abandoned land
abattoir byproducts
abattoirs
Abbottina rivularis
abdomen
abdominal cavity
abdominal fat
abdominal pregnancy
Abelmoschus
Abelmoschus esculentus
Abelmoschus moschatus
Aberia → Dovyalis
Abies
Abies alba
Abies amabilis
Abies balsamea
Abies balsamea lasiocarpa → Abies lasiocarpa
Abies borisii regis
Abies cephalonica
Abies cilicica
Abies concolor
Abies firma
Abies fraseri
Abies grandis
Abies guatemalensis
Abies hickeli → Abies religiosa

Vocabulary information

TITLE	AGROVOC Multilingual Thesaurus
LAST MODIFIED	Monday, December 10, 2018 10:05:16
TYPE	http://www.w3.org/2004/02/skos/core#ConceptScheme
VOID:INDATASET	http://aims.fao.org/aos/agrovoc/void.ttl#Agrovoc
URI	http://aims.fao.org/aos/agrovoc

Resource counts by type

Type	Count
Concept	36013

Term counts by language

Language	Preferred terms	Alternate terms	Hidden terms
Arabic	24757	1082	0
Czech	32187	8591	0
German	32582	10175	0
English	35995	9633	0
Spanish	33779	11167	0
Persian	19558	9159	0
Finnish	115	0	0
French	33376	7792	0
Hindi	19895	7552	0
Hungarian	19626	6716	0
Italian	22766	7350	0
Japanese	30588	5791	0

methods > cultural methods > soilless culture

PREFERRED TERM **soilless culture**

BROADER CONCEPT cultural methods (en)

NARROWER CONCEPTS
aeroponics (en)
hydroponics (en)
nutrient film technique (en)

IN OTHER LANGUAGES

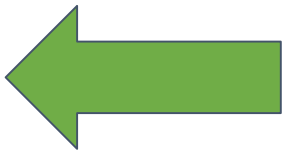
زراعة لاتربية	Arabic
无土栽培	Chinese
půdní kultura	Czech
Culture sans sol	French
Culture hors-sol	
Erdlose Kultur	German
मृदाहीन संवर्धन	Hindi
talaj nélküli termesztés	Hungarian
Coltura senza terra	Italian
無土壌栽培	Japanese
무토양재배	Korean
کشت بدون خاک	Persian
Uprawa bezglebowa	Polish
Cultivo sem solo	Portuguese
выращивание без почвы	Russian
pôdna kultúra	Slovak
Cultivo sin tierra	Spanish
Cultivo sin suelo	
การปลูกพืชไร้ดิน	Thai
topraksız tarım	Turkish

URI http://aims.fao.org/aos/agrovoc/c_14407

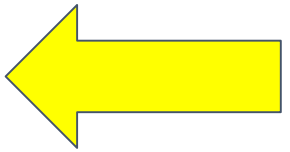
Download this concept: RDF/XML TURTLE JSON-LD Created 11/20/11, last modified 7/3/14

CLOSELY MATCHING CONCEPTS http://aims.fao.org/aos/biotechglossary/c_2355

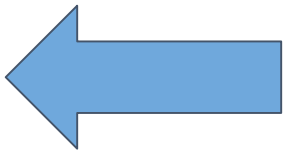
EXACTLY MATCHING CONCEPTS
http://cat.aii.caas.cn/concept/47672 cat.aii.caas.cn
http://d-nb.info/gnd/4430325-7 d-nb.info
http://lod.nal.usda.gov/nalt/46411 lod.nal.usda.gov



Broader/narrower concepts



Labels in different languages



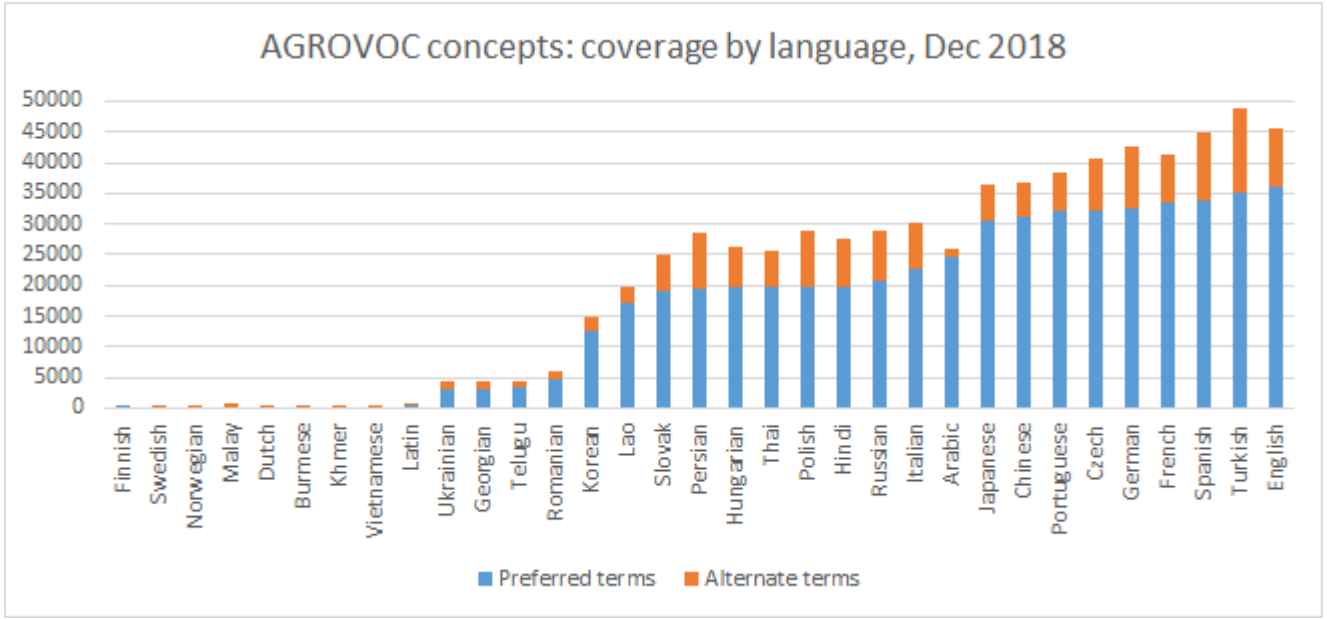
Alignments: interlinking

AGROVOC in numbers

December 2018 release:

Total no. of concepts 36,013. Total no. of terms 678,707

Webservices: 2000-4000 requests per day.
AGROVOC URIs: 15-20,000 requests per day



AGROVOC languages

PREFERRED TERM	raw milk	
BROADER CONCEPT	milk (en)	
IN OTHER LANGUAGES	原料乳	Chinese
	syrové mléko	Czech
	Lait cru	French
	Rohmilch	German
	कच्चा दूध	Hindi
	nyers tej	Hungarian
	Latte crudo	Italian
	生乳、生牛乳	Japanese
	생유	Korean
	ນົມດິບ	Lao
	Susu mentah	Malay
	شیر خام	Persian
	Mleko surowe	Polish
	Leite cru	Portuguese
	lapte crud	Romanian
	сырое молоко	Russian
	nespracované mlieko	Slovak
	Leche cruda	Spanish
	นมดิบ	Thai
	çiğ süt	Turkish

Available in up to 33 languages: Arabic, Burmese, Chinese, Czech, Dutch, English, Finnish, French, Georgian, German, Hindi, Hungarian, Italian, Japanese, Khmer, Korean, Lao, Latin, Malay, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Slovak, Spanish, Swedish, Telugu, Thai, Turkish, Ukrainian, Vietnamese.

Added 2018: Brazilian Portuguese, es-419 (Spanish appropriate for the Latin America and Caribbean region), Swahili.

Editorial workflows

FAO carries mainly the responsibility for the six FAO languages (English, French, Spanish, Arabic, Chinese and Russian), facilitates the technical maintenance of AGROVOC, including its publication as a Linked Open Data resource, and coordinates all editorial activities.

Technical editors and contributors suggest new terms and concepts via VocBench (or email).

ICARDA is a new technical editor (drylands, Farsi and Arabic). Contacts: Enrico Bonaiuti, Sara Jani

AGROVOC editors

AGROVOC is changing

Streamlined workflows: Since April 2017, AGROVOC has been released monthly

New AGROVOC team, building on past experience
Many new editors, active editor community
Mailing list for AGROVOC Editors and for AGROVOC in general

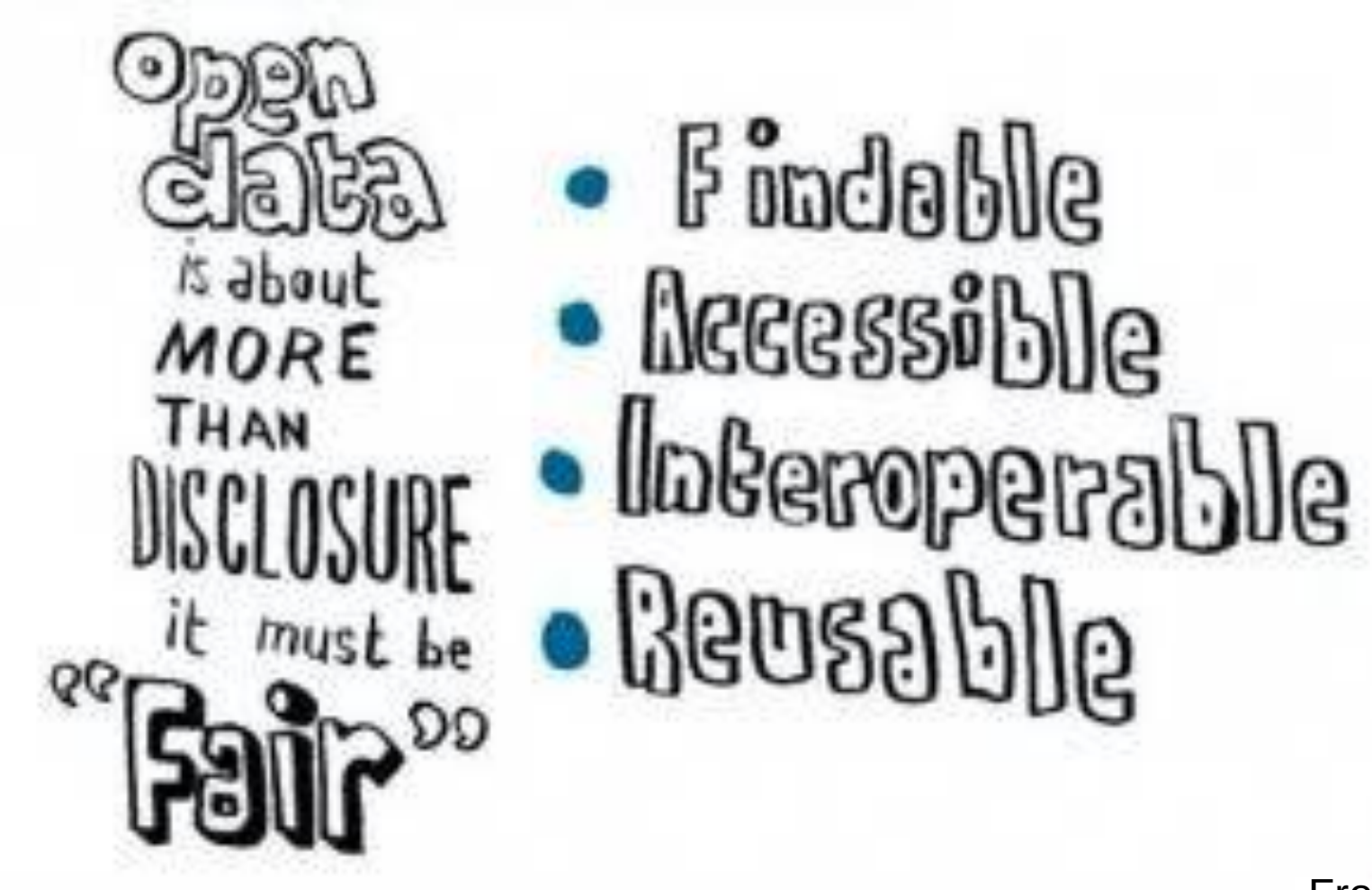
Architecture managed by University of Tor Vergata (ART: Artificial Intelligence Research group) in collaboration with FAO

Open data is

data that can be freely used, shared and built-on by anyone, anywhere, for any purpose.

Open Knowledge Foundation, 2005

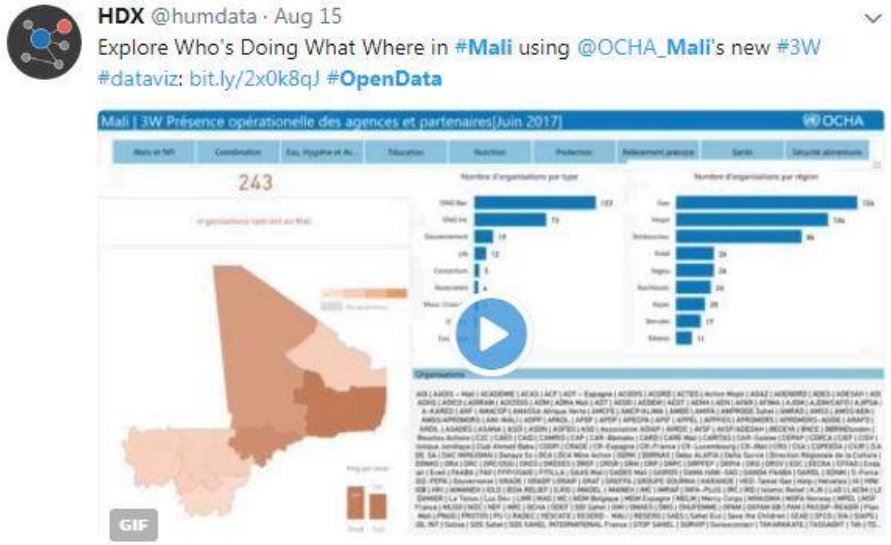
FAIR principles for open data



From https://www.dtls.nl/fair-data/fair-data/

Open data in action

Sectors: agriculture, budgets and public finance, development, company registers, education, energy and extractive industries, finance, forestry, environment, geospatial, health, ICTs, marine resources, pollution, population, public safety, transport, water, weather…..



AGROVOC is linked open data

AGROVOC is available as an SKOS-XL concept scheme, also published as a Linked Open Data (LOD) set composed of 36,000+ concepts available in up to 33 languages, aligned with 20+ other multilingual knowledge organization systems related to agriculture.

AGROVOC thesaurus content in English, Russian, French, Spanish, Arabic and Chinese is now released under the international licence CC BY IGO 3.0

Linking thesauri, bibliographic records, data sets

"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."

From "Sustainability in Data and Food" (Dean Allemang, 2018)

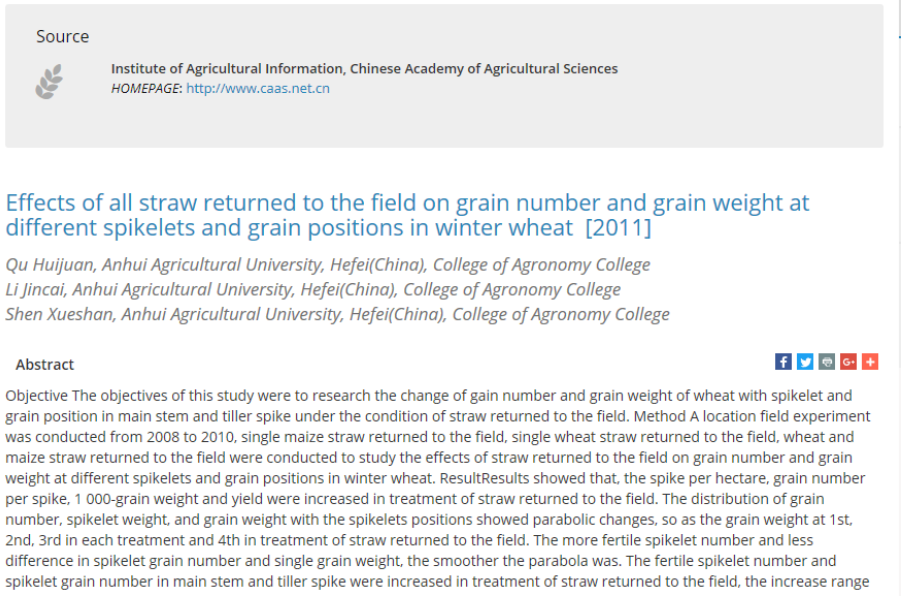
Linking thesauri

“The idea behind the linking of thesauri or subject heading lists is that the users, both indexers and searchers, can continue to use the same subject vocabulary as before. However, through linking it becomes possible to search in collection A, which has been indexed with vocabulary X, using vocabulary Y, which has been used to index collection B. In other words, we can give access to resources indexed through a different thesaurus or subject heading list, using a familiar vocabulary.”

(IFLA 2005)

AGROVOC in action: AGRIS Multilingual Search

- AGROVOC is the controlled vocabulary used to index AGRIS records
- Bibliographic references in the agricultural domain enhanced by the AGROVOC thesaurus, see http://agris.fao.org/
- A query in a specific language is expanded to match results in all languages available in AGROVOC



Source

Institute of Agricultural Information, Chinese Academy of Agricultural Sciences
HOMEPAGE: http://www.caas.net.cn

Effects of all straw returned to the field on grain number and grain weight at different spikelets and grain positions in winter wheat [2011]

Qu Huijuan, Anhui Agricultural University, Hefei(China), College of Agronomy College
Li Jincai, Anhui Agricultural University, Hefei(China), College of Agronomy College
Shen Xueshan, Anhui Agricultural University, Hefei(China), College of Agronomy College

Abstract

Objective The objectives of this study were to research the change of gain number and grain weight of wheat with spikelet and grain position in main stem and tiller spike under the condition of straw returned to the field. Method A location field experiment was conducted from 2008 to 2010, single maize straw returned to the field, single wheat straw returned to the field, wheat and maize straw returned to the field were conducted to study the effects of straw returned to the field on grain number and grain weight at different spikelets and grain positions in winter wheat. ResultResults showed that, the spike per hectare, grain number per spike, 1 000-grain weight and yield were increased in treatment of straw returned to the field. The distribution of grain number, spikelet weight, and grain weight with the spikelets positions showed parabolic changes, so as the grain weight at 1st, 2nd, 3rd in each treatment and 4th in treatment of straw returned to the field. The more fertile spikelet number and less difference in spikelet grain number and single grain weight, the smoother the parabola was. The fertile spikelet number and spikelet grain number in main stem and tiller spike were increased in treatment of straw returned to the field, the increase range

Source

Institute of Agricultural Information, Chinese Academy of Agricultural Sciences
主页: http://www.caas.net.cn

秸秆全量还田对冬小麦不同小穗位和粒位结实粒数和粒重的影响 [2011]

Qu Huijuan, Anhui Agricultural University, Hefei(China), College of Agronomy College
Li Jincai, Anhui Agricultural University, Hefei(China), College of Agronomy College
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摘要

目的研究小麦玉米秸秆连续全量还田对小麦穗部不同小穗位和粒位结实粒数及粒重变化的影响。方法通过设置3年定位试验研究小麦玉米秸秆全量还田对小麦不同小穗位结实粒数、粒重的小穗位和粒位的影响效应。结果小麦玉米秸秆连续全量还田提高了小麦的公顷穗数、穗粒数、千粒重和产量。各处理小麦不同小穗位结实粒数、小穗重、小穗平均单粒重均呈现二次曲线变化趋势，不同粒位的粒重也随小穗位的变化呈二次曲线形式。结实小穗越多，各小穗结实粒数或单粒重差异越小，空间分布模拟曲线的弧度越平缓。秸秆还田提高了小麦主茎穗和分蘖穗的结实小穗数与小穗结实粒数，降低了不孕小穗数，且下部小穗的结实粒数增加幅度较大；秸秆还田还提高了小麦不同粒位的单粒重，以第3、4粒位提高幅度较大。结论小麦玉米秸秆连续全量还田提高了小麦不同小穗位的结实粒数和粒重，进而提高了籽粒产量。

CGIAR Core Metadata and Application Profile

- Facilitates CGIAR Research Programs cross-repository searching and enhance discovery of CGIAR information products through open access
- Used by CGIAR Research Center and CRP repositories: minimum set of elements applicable across CGIAR Centers, data streams, and formats.
- Enables consistent annotation of final research products, adherence to open data under ”FAIR” principles, meta-searching and indexing across CGIAR repositories and databases, and inter-linking across multiple resources.

AGROVOC is a controlled vocabulary in CGIAR Core Metadata and Application Profile

Pistachio (Pistacia vera) by-products as ruminant feed: a review on production, management and utilization in arid and semi-arid areas in the Middle East

Authors
Alkhtib, Ashraf
Wamatu, Jane
Kaysi, Yahya
Mona, M.
Rischkowsky, Barbara A.

Date
2017

Language
en

Type
Journal Article

Review status
Peer Review

Accessibility

Share

Citation
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DOI: http://dx.doi.org/10.18006/2017.5(6).718.729

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Livestock

AGROVOC Keywords
ANIMAL FEEDING; FEEDS; CROPS; MIXED FARMING

Subjects
ANIMAL FEEDING; FEEDS; CROPS; CROP-LIVESTOCK;

Regions
MIDDLE EAST

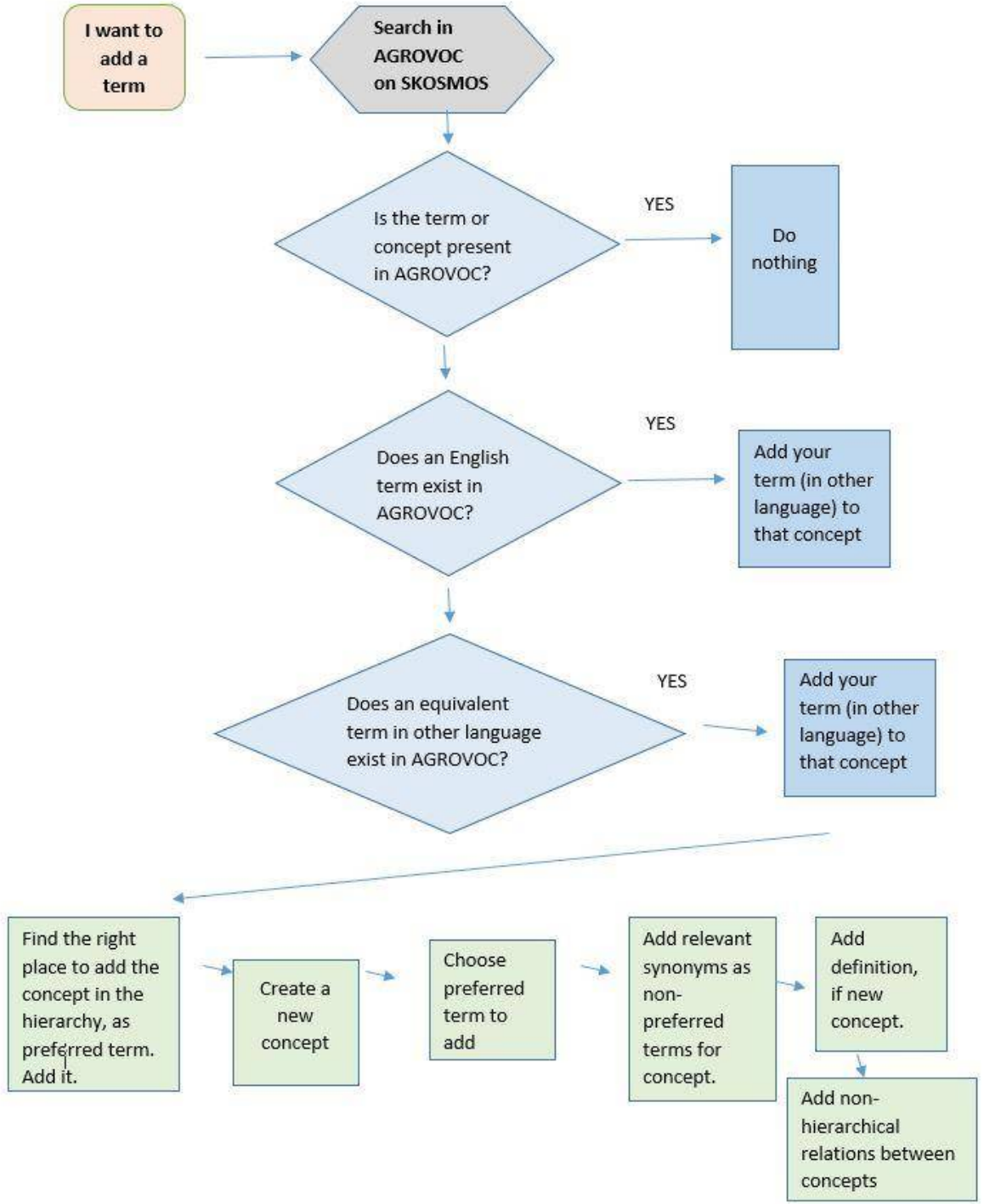
Subject coverage: what is most needed?

AGROVOC covers all areas of interest to FAO, such as food, nutrition, agriculture, forestry, fisheries, names of animals and plants, environment, biological notions, techniques of plant cultivation, etc. Very relevant to CGIAR.

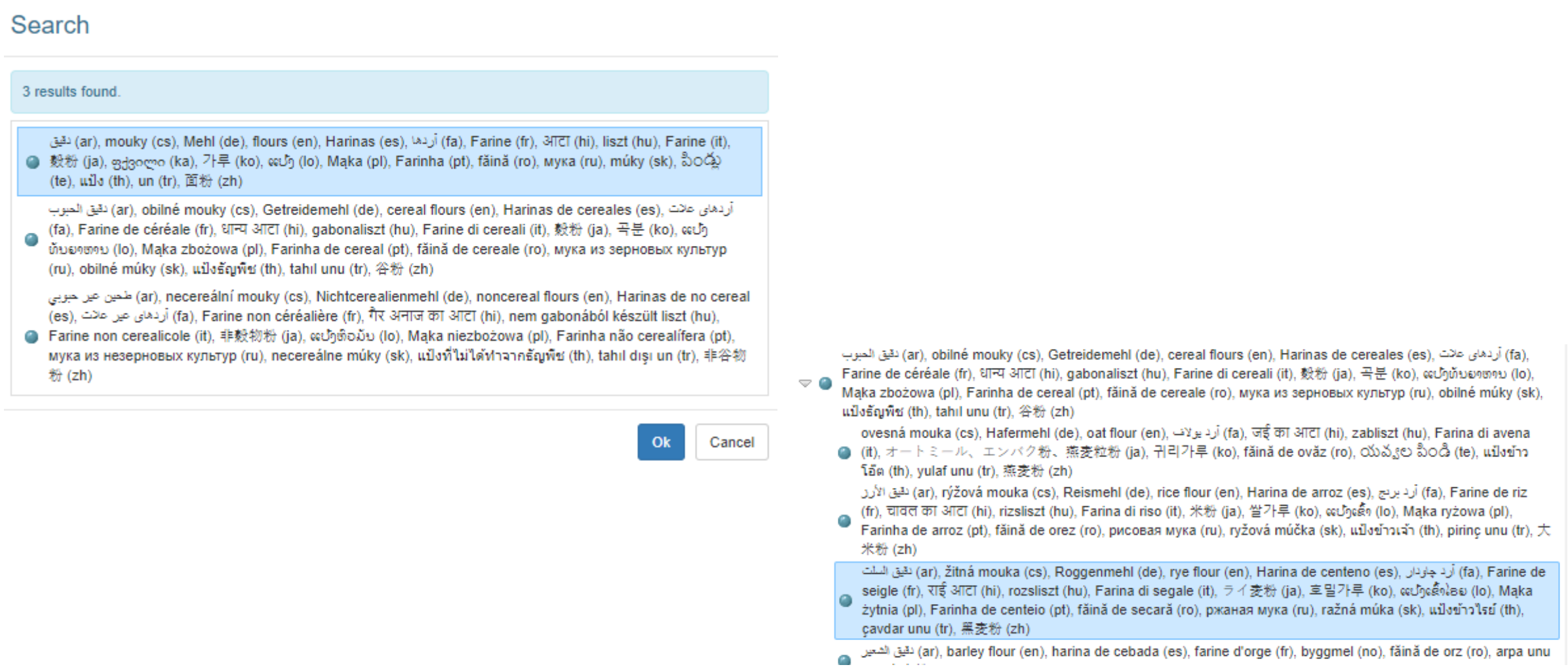
What new concepts are needed for indexing? Topics suggested for deeper coverage:

Animal Production; Animal husbandry; Animal science; Environment; Protection of the environment; Forming attitudes towards environment; Economy, economics; Agricultural economy; Nutrition, Ecology, Agricultural technology; Agricultural machinery; Engineering in agriculture, Healthy lifestyle; National Agricultural Heritages; Pedology; Biological oceanography, fisheries oceanography; Gardening; Agro-ecological zones; Limnology; forestry, agroforestry, microplastics, plastic pollution in sea, standard setting in safe food, standard setting for plant health and plant protection, Blue Growth, agroecology, biotechnology and other innovative approaches; digital agriculture, updated bacteria and virus classifications; biodiversity; law; climate change; microorganisms, and more.

For AGROVOC editors: Should I add a term or a concept? Where should I place a concept within the hierarchy? Which relation should I use to link related concepts? And for related terms?



Search: flours, rye flour



Accessing AGROVOC

Different services for accessing AGROVOC:

- SKOSMOS (to browse content): http://agrovoc.uniroma2.it/agrovoc/agrovoc/en/
- About AGROVOC: http://aims.fao.org/agrovoc
- VocBench3 (to manage content): http://agrovoc.uniroma2.it:8080/vocbench3/ (registration needed)
- WebServices (to integrate content):
- http://agrovoc.uniroma2.it:8080/SKOSWS/services/SKOSWS?wsdl
- SPARQL endpoint (to integrate content)

Contact us! agrovoc@fao.org

Food Security through sustainable agriculture

A global priority for the UN in the next 15 years (SDG2)

- Sustainably increase agricultural productivity
- Create more resilient food production systems
- Shape more accessible and equitable markets

How do we make use of global data and research to have an impact on world hunger?