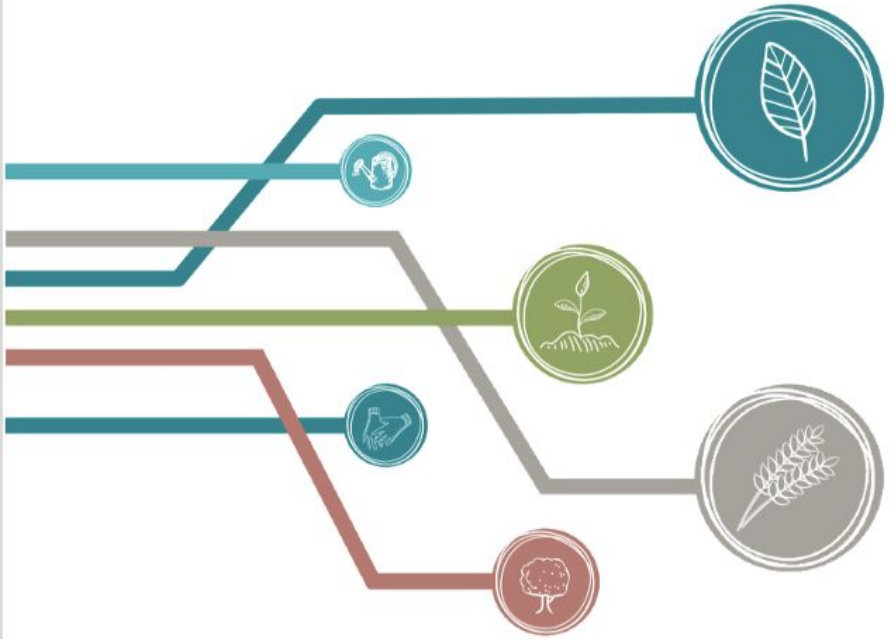
Food and Agriculture Organization of the United Nations

AGRIS
Agricultural Science and Technology Information
www.fao.org/agris



Promoting accessibility of scientific information and digital data in food & agriculture

DCMI Virtual 2021

6 October 2021

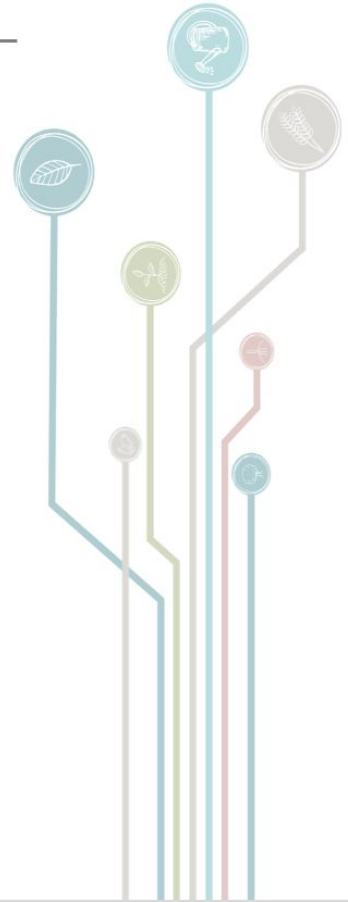
The Food and Agriculture Organization

Food and Agriculture Organization of the United Nations

The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations that leads international efforts to defeat hunger.

Through a series of knowledge programmes, FAO helps to increase the accessibility and visibility of research products in its Member Countries, and to make this information available, accessible and usable worldwide.

This exchange of knowledge not only supports FAO's work for a world free of hunger, malnutrition and poverty, but also contributes to the achievement of the Sustainable Development Goals (SDGs).



AGRIS

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AGRIS is the international information system for agricultural sciences and technology.

AGRIS collects bibliographic information from around the world on scientific, technical and socioeconomic publications on a wide variety of topics related to food and agriculture.

AGRIS became operational in 1975.

AGRIS is composed of two elements

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The AGRIS Network is a community of organizations who collect and contribute with information about food and agricultural literature and participate in knowledge sharing activities.

http://www.fao.org/agris/

AGRIS is also a database with more than 13.5M structured bibliographical records on agricultural science and technology in 90 languages.

http://agris.fao.org

The functions of AGRIS

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To create a single, comprehensive database of world-wide agricultural literature.

To meet information needs by providing online retrieval mechanisms and provide advice when ensuring requests for documents where not available online.

To interact with other search engines, increasing search efficiency and hence visibility and accessibility of agricultural scientific research.

Role of the AGRIS Network

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AGRIS exists thanks to the sharing of bibliographic references by a collaborative network of organizations.

This global collaboration depends on continued contributions, especially to strengthen multilingualism and equitable representation.

The AGRIS network itself is a key element in ensuring that AGRIS, as a database, continues to contain diverse content from relevant stakeholders.

The AGRIS Network in 2021

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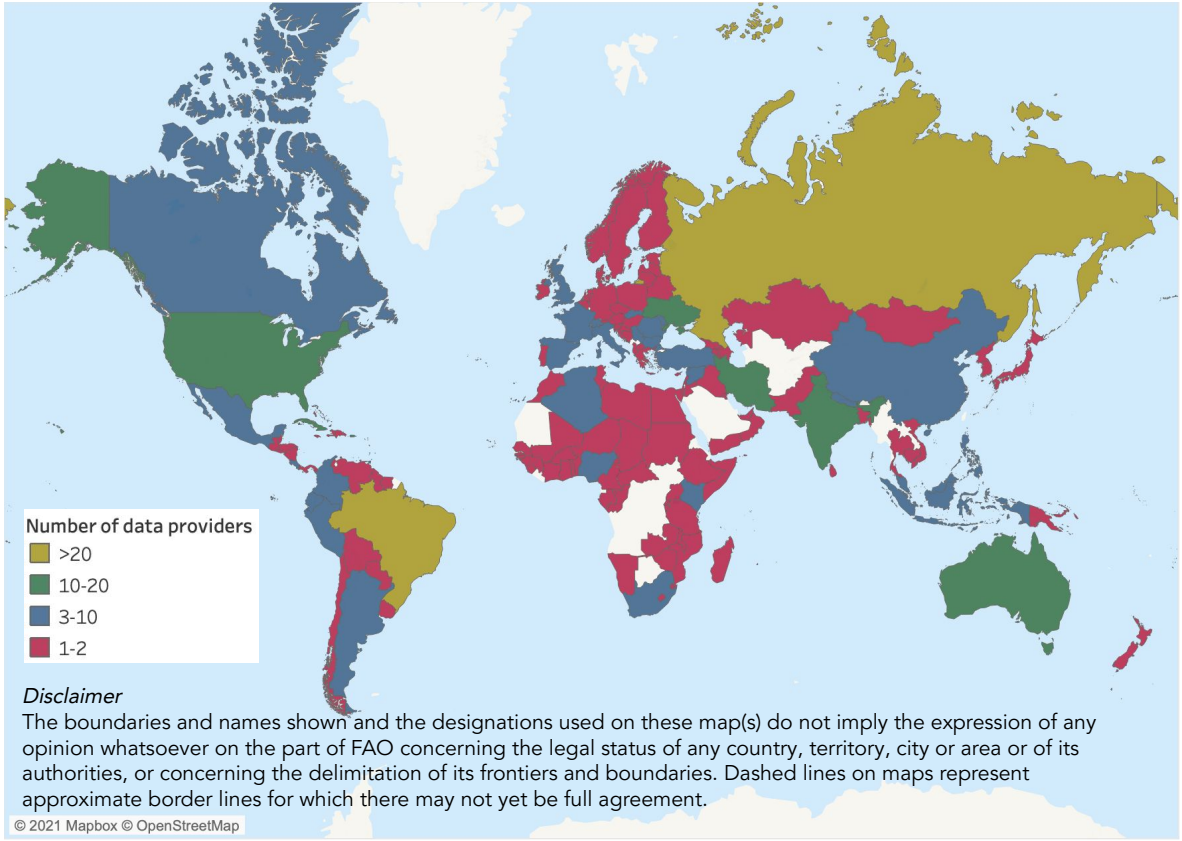

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Data Providers

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Pending applications

The AGRIS Network in a nutshell

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AGRIS Network is a community of organizations who collect and contribute with information about food and agricultural literature and participate in knowledge sharing activities.

It is currently composed of the two elements:

- Data providers, contribute to the content of AGRIS;
- Country Hubs, focal points for AGRIS at country or regional level. They are formerly known as National AGRIS Centres.

How to become a data provider?

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Organizations that made available their collection of scientific literature and/or data through digital libraries, repositories and journals can apply for a registration as a data provider in the AGRIS Network.

AGRIS Data Provider Registry

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Data providers, organizations which contribute to the content of AGRIS with their resources are listed in the registry.

The registry has been improved significantly to give more visibility to the organizations with links to their relevant AGRIS activities

Data provider's profile - an example

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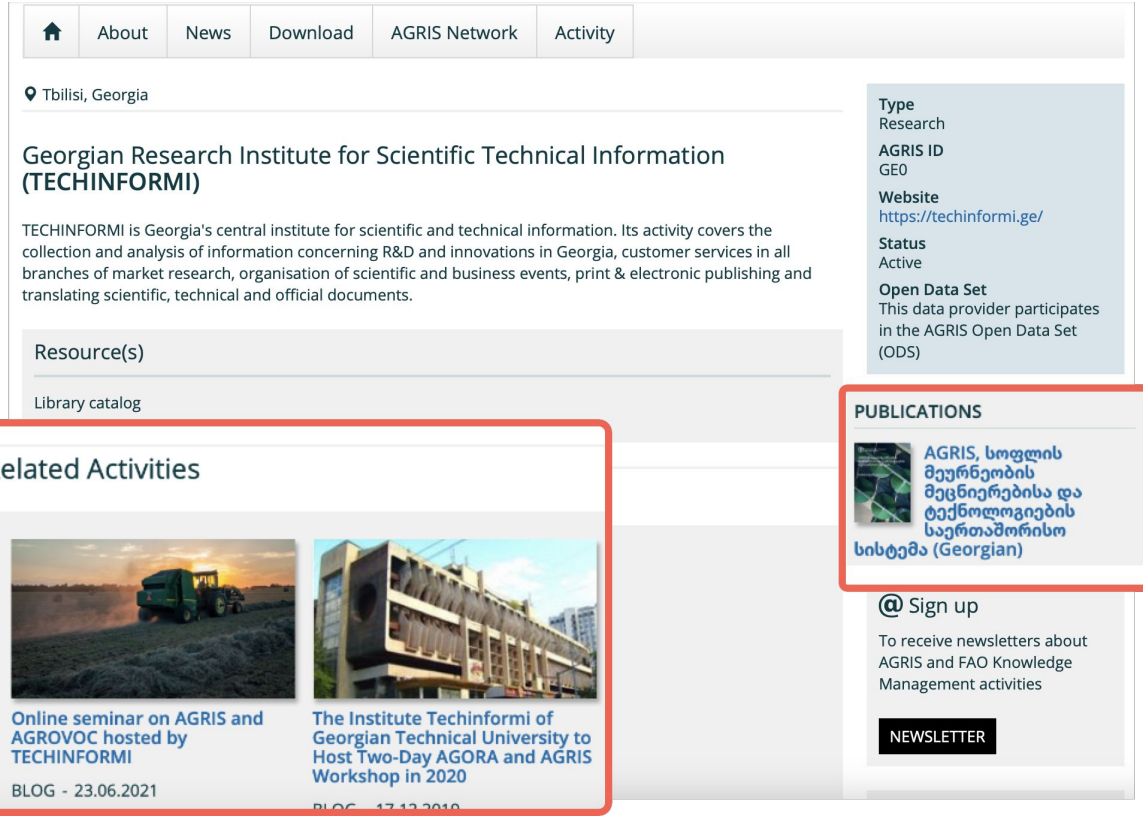

Data provider's activity status

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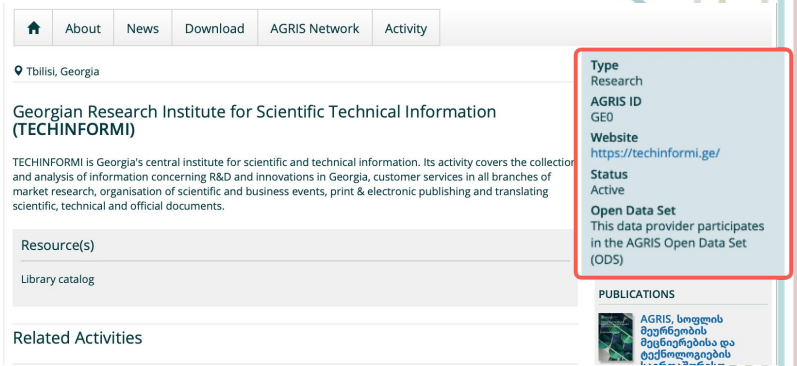
Considering the high usage of AGRIS worldwide, having up-to-date content in AGRIS is critical in terms of providing end users with the latest publications and/or data produced by members of the AGRIS Network.

Recently, the status of providers has been introduced on the Data Provider Profile as well as in the data provider section of the individual metadata records in AGRIS.



Visibility of data providers' collections

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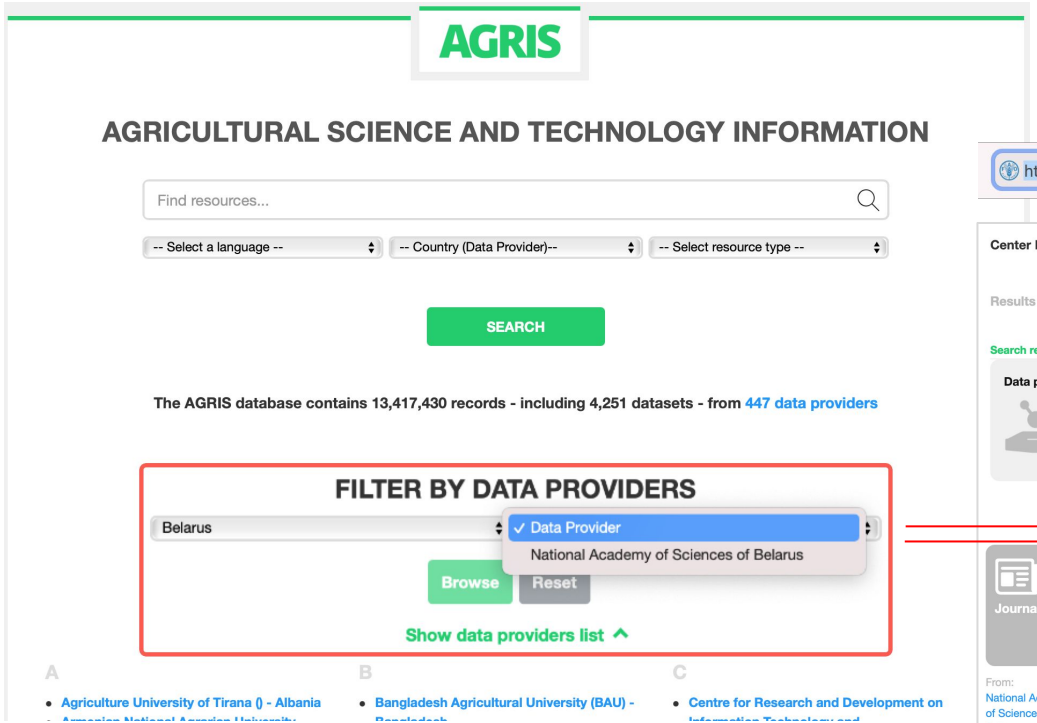

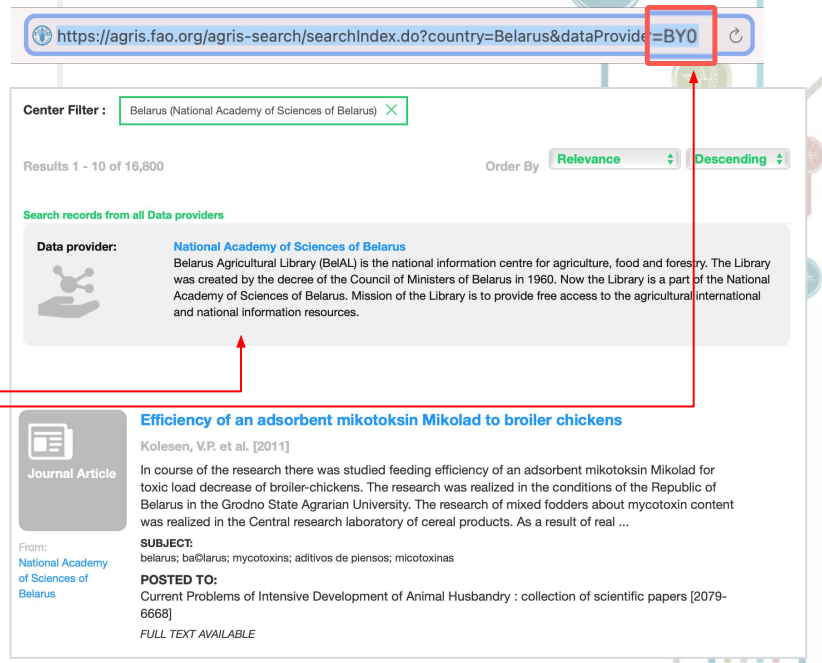

Content strategy of AGRIS

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Moving from unique repositories to a range of types of information resources: from focusing on library information systems to any automated way to expand the content collection with new items.

New content types: like *Datasets* have been integrated in the last years.

Focusing on quality: pertinent content is the preference, despite the fact that some items might be found that are slightly outside of the scope of AGRIS. In these cases, please let us know!

Collaborating with data providers: rather than expanding the collaborative network with service providers, AGRIS focuses on primary sources.

Full text: preferably, bibliography records should provide links to the full text.

Type of resources: Journal articles, monographs, books, book chapters, conference proceedings, papers, grey literature and datasets

Multilinguality in AGRIS

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Large number of languages represented in AGRIS as a result of indexing bibliographic records in local languages from all over the world.

Diversity in terms of representation of languages other than only English is an important value which AGRIS strongly endorses in scholarly communication.

Using AGROVOC, multilingual thesaurus and controlled vocabulary, in the infrastructure of AGRIS helps the discoverability of the content in number of languages.

How AGROVOC helps discoverability?

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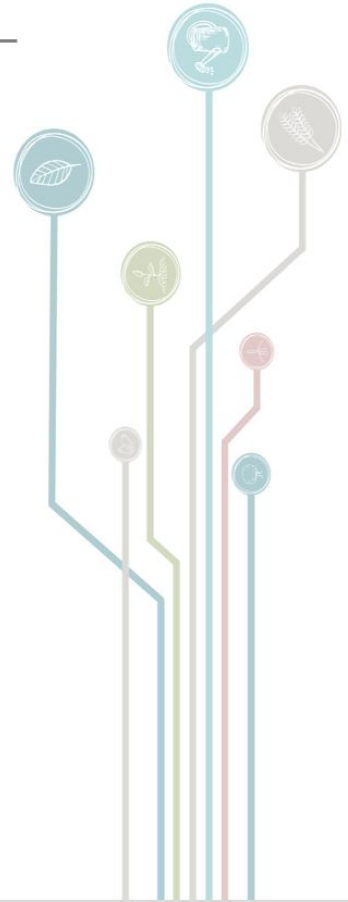
Full potential of a globally-distributed participatory information system can only be realized if every contributor applies certain standards, including using accepted language and terminology.

AGROVOC, a multilingual thesaurus, helps to provide a common vocabulary for food and agriculture worldwide and, currently enables users to work with more than 39 000 relevant agricultural concepts across 40 languages.

Consequently, AGROVOC allows AGRIS to transcend technical, geographical, political and lingual boundaries.



Example of AGROVOC terms use

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Data provider: World Bank

The World Bank is like a cooperative, made up of 189 member countries. These member countries, or shareholders, are represented by a Board of Governors, who are the ultimate policymakers at the World Bank. Generally, the governors are member countries' ministers of finance or ministers of development. They meet once a year at the Annual Meetings of the Boards of Governors of the World Bank Group and the International Monetary Fund.

Written Paper

Maize revolutions in Sub-Saharan Africa [2011]

Smale, Melinda; Byerlee, Derek; Jayne, Thom;

There have been numerous episodes of widespread adoption of improved seed and long-term achievements in the development of the maize seed industry in Sub-Saharan Africa. This summary takes a circumspect view of technical change in maize production. Adoption of improved seed has continued to rise gradually, now representing an estimated 44 percent of maize area in Eastern and Southern Africa (outside South Africa), and 60 percent of maize area in West and Central Africa. Use of fertilizer and restorative crop management practices remains relatively low and inefficient. An array of extension models has been tested and a combination of approaches will be needed to reach maize producers in heterogeneous agricultural environments. Yield growth overall has been 1 percent over the past half-century, although this figure masks the high variability in maize yields, as well as improvements in resistance to disease and abiotic pressures that would have caused yield decline in the absence of maize breeding progress. The authors argue that conducive policies are equally, if not more, important for maize productivity in the region than the development of new technology and techniques. Currently popular, voucher-based subsidies can "crowd out" the private sector and could be fiscally unsustainable.

Bibliographic information

In AGRIS since: 2014

All titles: "Maize revolutions in Sub-Saharan Africa"@eng

Other: "Policy Research working paper ; no. WPS 5659"

AGROVOC Keywords

- rural development
- seeds
- food prices
- potatoes
- research organizations

Top 10 AGROVOC keywords for this result

- plant genetic resource for food and agriculture (208688)
- zea mays (21838)
- maize (16273)
- crop yield (4132)
- yields (2710)
- hybrids (2606)
- varieties (2578)
- growth (1887)
- genetic resource (1735)
- silage (1656)

Ways to submit the metadata to AGRIS

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Metadata submission is managed both manually and automatically in AGRIS based on the capabilities of the data provider's information system.

AGRIS content is updated monthly, while harvester runs quarterly.

Data providers can submit metadata to AGRIS;

- via email,
- via Automatic Data Upload (ADU),
- through OAI-PMH endpoints.

Metadata quality and requirements

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Metadata quality is important for accurate and complete records in AGRIS.

Data providers are encouraged to use Linked Open Data Enabled Bibliographical Data (LODE-BD) 3.0 recommendations. Requirements for mandatory and optional properties are outlined in a given table.

Metadata can be submitted in AGRIS in various formats including Crossref, DOAJ, AGRIS AP, Endnote, MODS, Dublin Core and PubMed.

Group of elements	Properties	Detailing of elements
Title of the information	Title ++ Alternative title	The title is the name given to the resource and is one of the most important and relevant access points for any resource. The information is usually provided by a number of properties, including title, alternative title, subtitles, parallel titles, translated titles, transliterated titles.
Statement of responsibility	Creator Contributor Editor/volume +	This group contains the properties associated with any entity that is responsible for creating and/or publishing the content of the resource, for example, the creator, contributor, and publisher or issuer of a resource.
Physical description	Date ++ Identifier + Language ++ Format/ environment + Edition/version Source +	These properties describe the aspect and characteristics of the physical form of a resource: *Date* – a calendar date associated with an event in the resource's lifecycle. A resource can have several data: the date of creation, the date of editing, the date of modification, the date of revision, the date on which the information resource was published to the network, etc. *Identifier* – a number or string that allows the unique identification of the information resource in accordance with an official formal identification system (DOI, ISSN, ISBN, etc.). *Language* – the language of the digital content of the information resource. *Format/environment* – the file format, physical environment or resource size. *Edition/version* – when describing an edition or version of a resource, the relationship between a resource and its related version or versions should also be described. *Source* – a related resource from which the described resource comes. The source may consist of a combination of elements, such as bibliographic information, combined with an official identification system (ISBN, ISSN, URL). The described resource may derive entirely or partly from the related resource.
Location (physical location)	Location +	This element records information about the *location and availability* of the information resource, as it is quite important for a resource to be located and obtained in the process of information exchange.
Subject	Subject term + Classification Keyword + Geographical term	The *Subject* group contains properties that describe or help discover what the resource is or denotes, in the form of a subject heading, classification/ category, keywords, and geographical term. The best-recommended practices to determine the subject of resource content consist in selecting a value from a controlled vocabulary or formal classification scheme. In the case of the AGRIS database, it is advisable to use the multilingual AGROVOC thesaurus. The use of controlled vocabularies and formal classification schemas is encouraged. More and more name authority files, controlled vocabularies, and resource datasets are becoming available as Linked Open Data (LOD).
Content description	Description/ Abstract + Type/form/ category	Two major types of descriptions are considered in this group, which focus on the content of the resource and not on the physical object: a) any representative description of the content; b) the type or category of resource. The *description* may include, but is not limited to: an abstract, a table of contents, a note, a graphical representation or a free-text account of the resource. The *type* reflects information about the nature or category of the resource content. The type includes terms that describe general categories, functions, types or levels of aggregation for content. The *Format* item is used to describe the file format, resource size, physical or digital media of the resource.

Services: Institutional Dashboard

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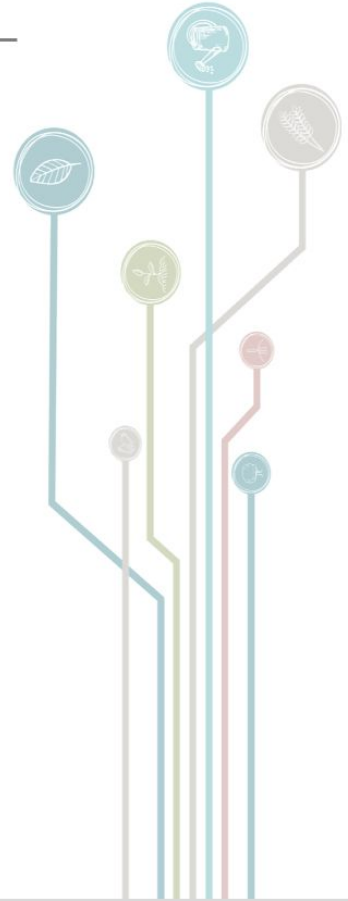
Institutional dashboard: Data providers can access front-end and back-end services of AGRIS including;

- upload and submit metadata by using *Automatic Data Upload (ADU)*;
- check their upload logs historically in ADU;
- access institutional *usage statistics* including page views, country visits by year;
- see most visited 15 records;
- browse and search institutional collections; and
- filter content by country and data providers.



New! Automatic Data Upload (ADU)

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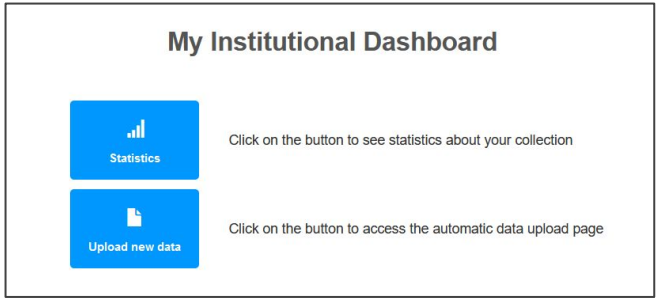
FAO has developed a new functionality called ADU to allow data providers to upload bibliographic records (metadata) onto to the login-protected institutional dashboard

ADU simplifies the data submission process. Data providers who use the service don't need to send data via email.

ADU enables organizations to trace the logs of their submissions.



Enhanced! Data harvesting

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FAO enhances the ways to automate the process of data ingestion to provide current and accurate content to its users.

With the development of a harvester component, FAO has been adding records to the AGRIS database by automatically harvesting bibliographic data since May 2021.

Over the past few months, more than 1 million new records were added to the database, which now has over 13 million bibliographic records.

Key content providers such as Scielo in fourteen countries and DOAJ open access journals in agricultural sciences are now indexed in AGRIS.

AGRIS Open DataSet (ODS)

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AGRIS ODS is built to share metadata records with third parties for wider dissemination.

It increases visibility of resources and enables reuse of the metadata by allowing people to run machine learning algorithms and use semantic technologies to discover connections between datasets and to derive new knowledge.

AGRIS ODS is licensed under CC BY 3.0 IGO and available in different formats including AGRIS AP and RDF formats.

New developments to improve discoverability

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- Improvements to the search functionalities
- Enhance quality of current bibliographic records
- Better usability
- More visibility of AGRIS data providers
- Better connection with AGROVOC

Continue to carefully listen the demands from the AGRIS Network organizations.

The FAO AGRIS Team

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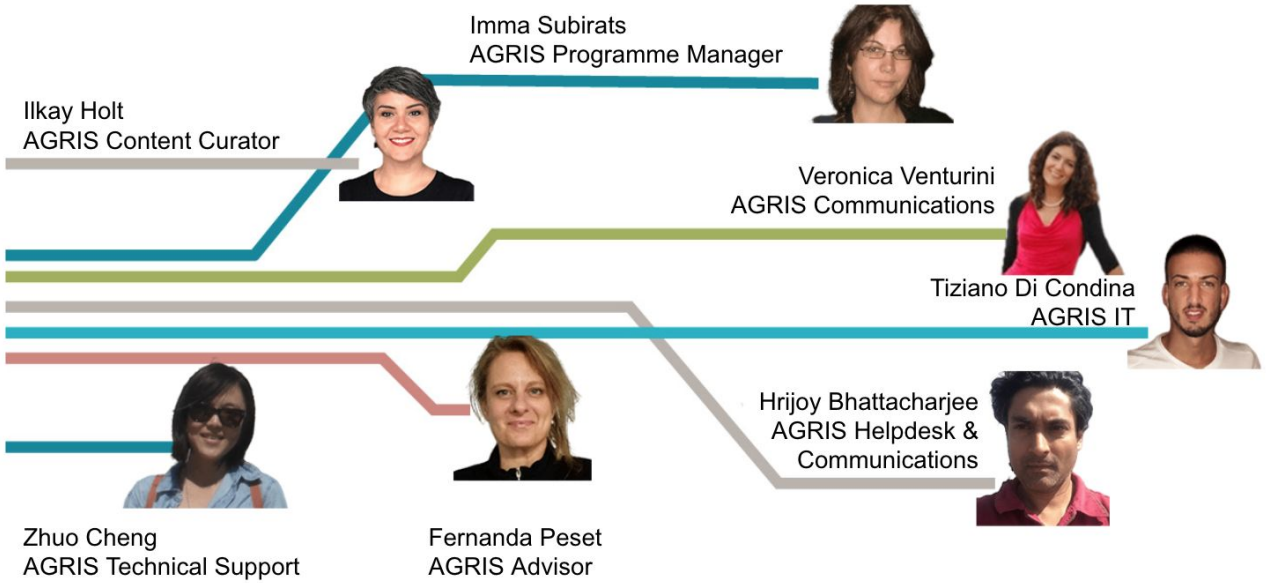

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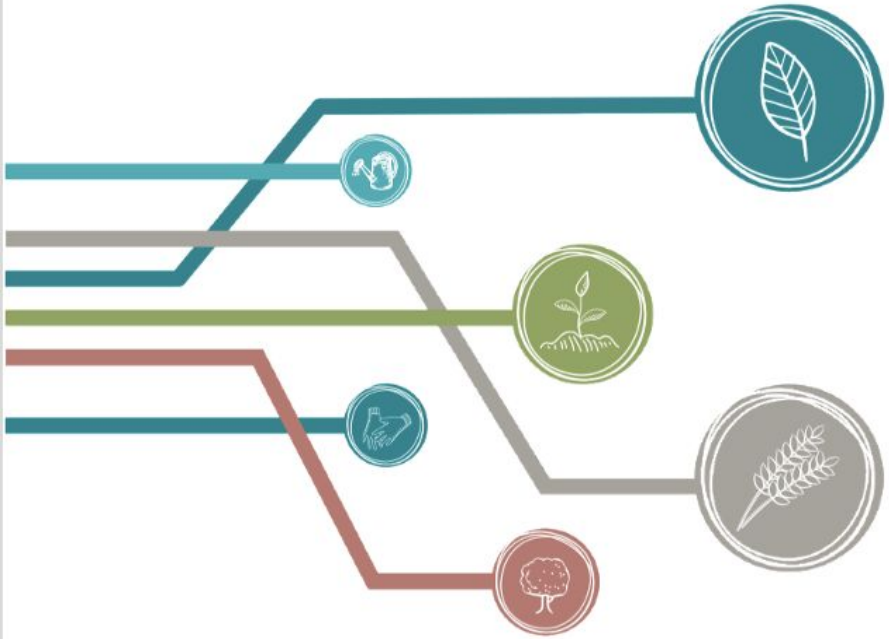

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