



How data is collected and integrated by FAO

**The AGRIS 2010 project:
A portal for resource discovery in agriculture**

Stefano Anibaldi
Knowledge Exchange Division
FAO of the United Nations



Outline

- Introduce the AGRIS metadata
- Describe the constraints of the AGRIS search engine
- Highlight how AGRIS fits the Linked Data cloud
- Mock-ups of the new AGRIS portal
- **Tests with Drupal for content and document management**



AGRIS metadata

- The AGRIS repository contains about 3 millions agricultural resources, collected by more than 150 institutions since 1975, all of them belonging to the [AGRIS Network](#).
- Its content is a structured catalogue of high quality bibliographic references, encoded with a qualified DC metadata format.
- The typical user of the FAO [AGRIS service](#) is a scientist, who needs to search and retrieve information on a specific agricultural subject.



Problem..

- Classic bibliographic metadata is often understood in an overly-simplistic fashion: users are seeking information against a system populated with metadata, which provides a metadata-driven interface through which users find their way to their target documents.
- The results are bibliographic descriptions rich in its metadata but too often not sufficient for researchers who want to extend their knowledge on a specific topic.



Solution..

- With the rise of full text search and online availability of more research material, such a role for metadata can appear redundant.
- Bibliographic metadata grows in value as the Web grows in connectivity, and can provide researchers with a map of the global research community, linking their papers, thesis, articles with a wider grey literature (preprints, drafts) and with communication platforms (blogs, forums) that help researchers put formal findings into a wider context



AGRIS 2010 portal

- The main objective of the new AGRIS portal is to become a hub to access the diverse knowledge in agricultural science and technology available globally on the web.
- It not only gives the researchers access to the AGRIS metadata, but it also provides data services to extend their knowledge, accessing Web data such as full text documents and news.



AGRIS 2010 portal (continued)

- This is currently achieved using Drupal, for example:
 - using the Drupal news aggregator module, creating an RSS channel on Agrifeeds, the agricultural news and events aggregator.
 - linking and expanding information to other Web resources, such as Wikipedia.

AGRIS 2010 portal: screenshot

1. user types
"rice"

The screenshot shows the AGRIS 2010 portal interface. At the top, there are language options: العربية, 中文, English, Français, and Español. The main header reads "AGRIS :: International Information System for the Agricultural Sciences and Technology". Below this, the search criteria are displayed: "Search AGRIS - from 1975 to date" with a search box containing "rice". A URL for the results is provided: "http://prapp14.fao.org/agris?query=rice". The search results show 75781 results, with results 1-10 displayed. The first result is "Handbook of insect pests of rice in Sierra Leone" by Akibo-Betts, D.T. and Raymond, S.A. The second result is "Economic costs of drought and rice farmers' coping mechanisms" by Pandey, S. The third result is "Comparison of mixed herbicides in rice fields with reduced dosage" by Khalghani, Javad. The fourth result is "Effect of leaf color chart on N fertilizer and insecticide use in rice: a case study in West Bengal, India" by Islam, Z. On the right side, there is an "Agrovoc search" section with a search box containing "rice" and a dropdown menu showing related terms like "Rice", "Rice beans", "Rice cake", and "Rice field aquaculture". Below this is a "Related News" section with several news items related to rice, such as "Food Supplies At Risk From Price Speculation" and "FAO provides much needed boost to Cambodian silk sector". At the bottom right, there is a logo for "Under the umbrella of CIARD".

2. thesaurus
enhanced
search

3. news related
to "rice"

AGRIS 2010 portal: mock-ups

Click and expand the information on the author

News related to the original query on "Aquaculture"

Links on "Aquaculture"

The screenshot displays the AGRIS 2010 portal interface. At the top, there are language options: العربية, 中文, English, Français, Español. The main header reads "AGRIS INTERNATIONAL INFORMATION SYSTEM FOR THE AGRICULTURAL SCIENCES AND TECHNOLOGY". Below this, a search box contains the term "Aquaculture" and a "Search" button. A "compose and refine your research" section includes buttons for "All terms", "Exact phrase", and "Reset". The search results show a list of items, with the first one highlighted: "Development of sustainable aquaculture project (DSAP): mid-term review report". This item lists authors as Mandal, M.A.S., and Chowhan, and the publisher as WorldFish Center. It includes a list of articles and a date of 2004. A second result, "Increasing and sustaining the productivity of fish and rice in the flood-prone ecosystems in south and southeast Asia (Tag 350): final report to the International Fund Agricultural Development", is also visible. On the right side, a "Semantic history" section shows a tree structure: "Article (Agris) (+)" leading to "Development of sustainable aquaculture project.." which leads to "Author (Agris)(+)" and finally to "Mandal", which is circled in red. The left sidebar contains the FAO logo and navigation links like "AGRIS home", "How to participate", and "The AGRIS Network". It also features a "Related News" section with a link to "Development of sustainable aquaculture project (DSAP): mid-term review report" and a "Related links" section with a link to "Aquaculture principles and practices".

AGRIS 2010 portal: mock-ups

A "snippet" includes the record and a set of attributes of the record: authors, dates, publishers, languages, ..

...further information on the author from Wikipedia

for a world without hunger

AGRIS home

How to participate

The AGRIS Network

News

Related News

from Agrifeeds:

[see all..]

Related links

from Google:

Pharmacotherapeutics of tea: proposed strategies and ...

DBLP: Deba Prasad Mandal (selection)...

from Google books:

Debaprasad Mandal - Author Index - Begell House Inc ...

Rice Aquaculture

Development of sustainable aquaculture project (DSAP): mid-term review report

Authors: **Mandal** **M.A.S.** **Chowhan** Publishers: **WorldFish Center**

▶ Debaprasad Mandal www.DebMandal.org

▶ **Affiliation**
Bose Institute, P-1/12 CIT Scheme VII M, Kolkata-700 054, India

▶ **Articles**
Black Tea Protects Thymocytes in Tumor-Bearing Animals by Differential Regulation of Intracellular ROS in Tumor Cells and Thymocytes - Vol. 24 '2005 - Journal of Environmental Pathology, Toxicology and Oncology
Black Tea-Induced Amelioration of Hepatic Oxidative Stress through Antioxidative Activity in EAC-Bearing Mice - Vol. 26 '2007 - Journal of Environmental

Date: **2004** Cour

**Increasing and su:
prone ecosystems
to the Internation:**

Authors: **WorldFish**

Date: **2004** Cou

Debaprasad Mandal from LinkedIn

WIKIPEDIA

Post Doctoral fellow at Texas A&M University

Location Nürnberg Area, Germany

Industry Research

Current Post Doctoral fellow at Texas A&M University

Past AvH Fellow at University of Erlangen-Nuremberg

Education Indian Institute of Technology, Kanpur

Public Profile
<http://www.linkedin.com/in/debaprasad123>

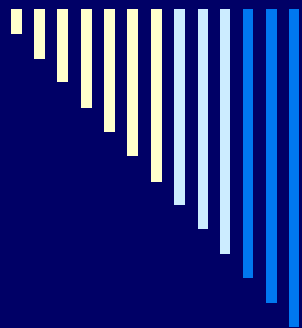
from flickr

Contact us © FAO, 2008

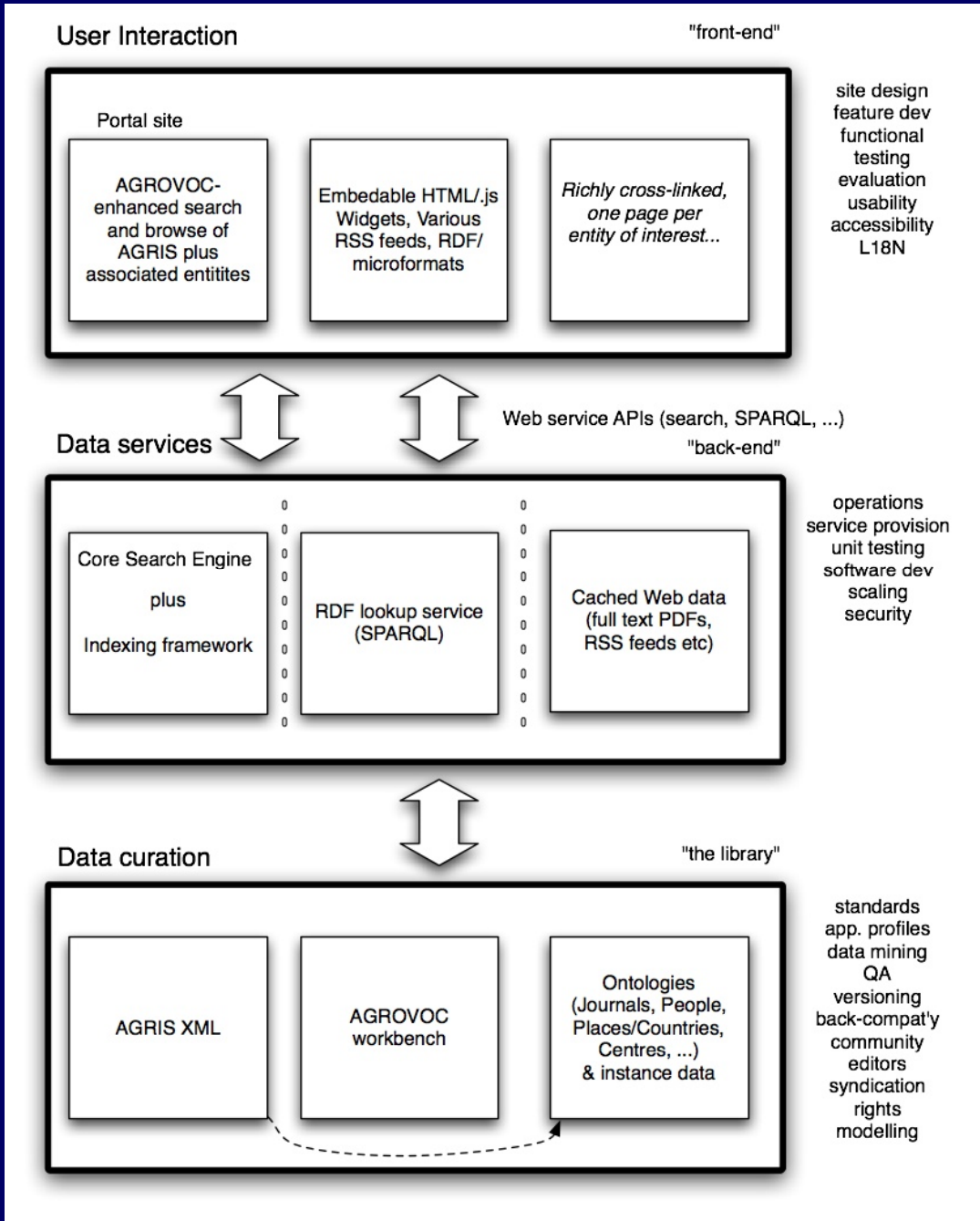


Software independent

- The core page navigation structure of the portal derives from user needs analysis and FAO's ontologically-modelled datasets, rather than artefacts of software package.
- The front-end is currently developed in Drupal, but in the future other CMS' or custom code may be used..
- The architecture allows per-"entity" pages for at least Articles, Topics, Places, Groups, Events which can remain in place regardless of underlying software.



AGRIS 2010 architecture





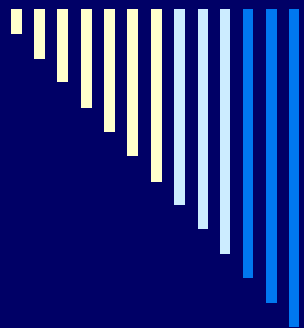
Conclusions

- The final goal of the project is to exploit the rich AGRIS silo to show how every new resource added to AGRIS can provide information about places, people and topics.
- This is achieved by means of modern tools (standards, software) and community trends, such as Linked open Data (LOM), open archives, RSS/Atom syndication.
- In this way, each institution participating in the agricultural research Web will also publish information (e.g. blog feeds) that interconnects with the hub of linked data managed through AGRIS.



Other tests with Drupal CMS

- We are currently experimenting with other built-in modules available in Drupal, that treat any kind of user-defined content type.
- These vary from simple web pages to events, people, bibliographical records or any other content types that can be easily customized.



An example: Drupal Bibliography module

- A document can be defined as a specific content type with all the necessary fields and their mapping to metadata elements.
- Subject-indexing fields can be associated to controlled vocabularies.
- Different views and feeds can be created
- An [OAI-PMH](#) related module provides an interface for harvesting XML metadata from your repository.

Drupal: metadata mapping

Mapping Drupal
metadata
to a DC
qualified metadata

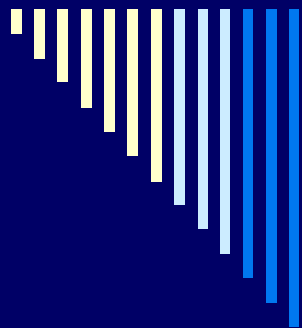
Specify the RDF class of this content type. You can also map the CCK fields to existing RDF properties.

RDF class:

Choose the RDF class this content type will be mapped to.

Label	Name	Type	RDF property
Title	Node module form.		<input type="text" value="dc:title"/>
Description	Node module form.		<input type="text" value="dc:description"/>
Organization (owner / creator)	field_organization	Text	<input type="text" value="ags:organizer"/>
Dates	field_startdate	Datetime	<input type="text" value="dc:date"/>
City	field_city	Text	<input type="text" value="ags:locationCity"/>
Country	field_country	Text	<input type="text" value="ags:locationCountry"/>
URL for more info	field_url	Text	<input type="text"/>

Save



Drupal: view of stored contents

Drupal view:
blocks

LATEST NEWS

AgriFeeds now lists "Current Vacancies" in Agricultural Organizations!

Posted on: 02/09/2009

Technical Program online - ICSD 2009

Posted on: 27/08/2009

ICSD 2009 - Registration Open

Posted on: 18/08/2009

ISO 25964: Thesauri and interoperability with other vocabularies

Posted on: 05/08/2009

[more](#)

 RSS feed of latest 50 news items



LATEST EVENTS

D4Science World User Meeting

25/11/2009 - 26/11/2009

Special Track on Metadata and Semantics for Agriculture, Food & Environment 3rd International Conference on Metadata and Semantics Research (MTSR'09)

30/09/2009 - 02/10/2009

WEBAGRIS users workshop

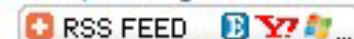
23/09/2009 - 25/09/2009

Knowledge Share Fair

20/01/2009 - 22/01/2009

[more](#)

 RSS feed of upcoming/latest events



Add all to Google Calendar



URLs

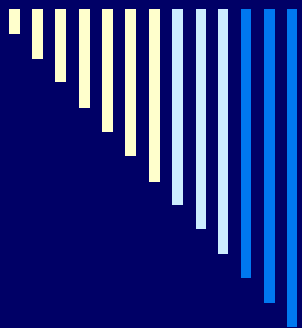
- The current AGRIS Search application:
<http://www.fao.org/agris/search>
- Agrifeeds:
<http://www.agrifeeds.org/>
- AIMS (Ontologies, Metadata, AGROVOC concept server):
<http://aims.fao.org/>
- AGRIS AP (AGRIS Application Profile):
<http://www.fao.org/docrep/008/ae909e/ae909e00.htm>
- Drupal:
<http://drupal.org/>



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- Antonella Picarella
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- Johannes Keizer

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Thank you!

Questions?