

AgriFeeds: The Agricultural News and Events Aggregator

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Background

Since 2000, the Food and Agriculture Organization of the United Nations (FAO) has undertaken a number of initiatives to facilitate the creation of standards for agricultural information exchange, especially in the area of document-like information objects¹. In the last couple of years, a strong need has emerged for a standard way to interchange other types of information (on organizations, projects, experts, events, news) between systems residing on different platforms in the agricultural community, one capable of cutting across networks of partners while at the same time overcoming barriers to cooperation and interoperability. The need to (i) facilitate collaboration and (ii) harmonize the decentralized efforts in the development of methodologies for successful agricultural information management was reiterated by the Expert consultation² of October 2005, which stressed the need for an “intervention point on interlinking different information types”. During the consultation, a Content Management Taskforce (CMTF) was established to focus on this specific issue. One of the areas of work on which the CMTF was asked to concentrate was the “exchange of news feeds”, and how the community supporting agricultural information services can benefit from collaboration through the application of freely available Web 2.0 tools. In the long run, more sophisticated systems may be developed that allow, for example, filtering to produce custom-made feeds, such as those for an “early warning system” on topics such as *avian influenza*, *desert locusts* and *climate change*.

Context

As technologies emerged for sharing and interlinking different types of information, there was a real business-case for creating a standard to describe events in such a way that it:

- *remained* simple to create and apply;
- *captured* enough information to share information about events, including dates and location;
- *ensured* that data ownerships would be retained by the publisher; and
- *clearly made* the benefits of establishing such a standard transparent to all users.

There are many aspects to an event, ranging from simple announcement to detailed description with

session breakdowns, so the goal of this standard was to provide just enough information to allow users to ‘know’ about an upcoming event and guide them to the event website, which would provide further detailed information. In collaboration with its partners GFAR (Global Forum on Agricultural Research) and GFIS (Global Forest Information Service, FAO has created and implemented a “minimum” web-feed (RSS and Atom) based standard to share event information. In addition to the basic RSS/Atom fields, such as <title>, <link>, <pubDate> and <description>, the event feed needs to capture the start and end dates of an event and the city and country where it is being held. This information allows aggregators (Service Providers) to: *browse* events by country or region, *insert* event metadata into Outlook calendars (one-click process), and *filter* events based on date to show upcoming events.

KEY URL: <http://www.agrifeads.org>

This new standard, called the Agricultural Events Application Profile (Ag-Events AP), keeps the information communicated simple and interoperable across domains and organizations, yet rich enough to communicate all relevant information. Examples of services currently using Ag-Events AP are AgriFeeds (www.agrifeads.org) and the Global Forest Information Service (www.gfis.net).

AgriFeeds

AgriFeeds is a freely available online aggregator of agriculture-related news and events. In addition to serving as a container for this type of information, it is a mechanism aimed at the repackaging of information in order to maximize its reach and reuse. The scope of the AgriFeeds aggregator is to facilitate interoperability between information systems by bringing together the right information to the right people at the right time, i.e. disseminating agriculture-related information to users who have a purpose for it — in real time. This is accomplished by exposing users to a comprehensive series of news, literally bringing events to their websites and calendars, from Agriculture to Forestry, Fisheries, Food Security and related domains, e.g. Sustainable Development, Nutrition, etc. AgriFeeds harvests news and events on a daily basis from registered sources and offers an easy way to customize and re-use the aggregated information. This demonstrates the two-fold nature of AgriFeeds:

- AgriFeeds as aggregator of information: As an RSS aggregator, AgriFeeds stores and indexes individual news/event items for re-aggregation on the part of the user. Thanks to the very granular storage of the information (at the level of the individual metadata elements describing each item), you can filter news and events

on AgriFeeds in order to obtain a custom set of items that suits your needs, e.g. only news on a given domain/topic, only news excerpted from selected organizations, or only events taking place in a certain region.

■ AgriFeeds as disseminator of information:

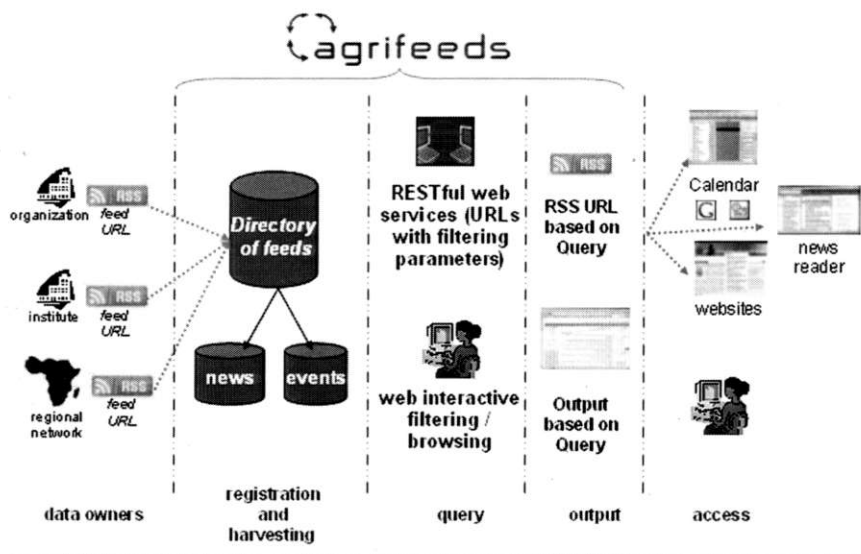
- through an interactive web interface that provides browsing and filtering functionalities with a final display of results on the screen;
- by exposing the results as feeds: once you are happy with the filters you set, you can copy the URL of the corresponding feed and use it to display those news items on your website or on your own feed reader. The feed is regularly updated and will always contain the latest items that satisfy your filters;
- by providing custom feeds as RESTful web services³: you can call the base URL and provide specific parameters to get a customized feed.

These last two usages of AgriFeeds allow for fast and powerful dissemination of the information through different and targeted channels: websites, news readers, other aggregators, e-mail alerts, public calendars, and so forth.

Figure 1 depicts the basic flow of information into and out of AgriFeeds.

- Data owners create feeds (news and/or events) com-

FIGURE 1 – The flow of information to and from AgriFeeds



pliant with the RSS (for news) and Ag-Events AP (for events) standards.

- They then register the feeds into the AgriFeeds Directory of feeds. Once the feed has been registered, the individual news and events are harvested on a daily basis.
- Users (and eventually computers through RESTful HTTP requests) can query AgriFeeds for news and event information.
- This information is shown to the users directly on the AgriFeeds website or it can be accessed further, through RSS, in websites, news readers and calendars.

FIGURE 2 – Browsing events by region in AgriFeeds

Browse events by region

Browsing events by region/country, beside just helping you to narrow down your search and find the news that interest you, allows you to create a filtering option for a customised feed. After clicking on a region/country, you will find an "RSS feed" link in the results page: the url of that feed will always expose updated results for that region/country.

Africa	Algeria Angola Benin Botswana Burkina Faso Burundi Côte d'Ivoire Cameroon Cape Verde Central African Republic Chad Comoros Congo Democratic Republic of the Congo Djibouti Egypt Equatorial Guinea Eritrea Ethiopia Gabon Gambia Ghana Guinea Guinea-Bissau Kenya Lesotho Liberia Libyan Arab Jamahiriya Madagascar Malawi Mali Mauritania Mauritius Morocco Mozambique Namibia Niger Nigeria Rwanda Sao Tome and Principe Senegal Seychelles Sierra Leone Somalia South Africa Sudan Swaziland Togo Tunisia Uganda United Republic of Tanzania Zambia Zimbabwe
Asia	Afghanistan Armenia Azerbaijan Bahrain Bangladesh Bhutan Cambodia China Democratic People's Republic of Korea Georgia India Indonesia Iran (Islamic Republic of) Iraq Israel Japan Jordan Kazakhstan Kuwait Kyrgyzstan Lao People's Democratic Republic Lebanon Malaysia Maldives Mongolia Myanmar Nepal Oman Pakistan Philippines Qatar Republic of Korea Russian Federation Saudi Arabia Sri Lanka Syrian Arab Republic Tajikistan Thailand Timor-Leste Turkmenistan United Arab Emirates Uzbekistan Viet Nam Yemen
Caribbean	Antigua and Barbuda Bahamas Barbados Cuba Dominica Dominican Republic Grenada Haiti Hungary Jamaica Saint Kitts and Nevis Saint Lucia Saint Vincent and the Grenadines Trinidad and Tobago
Central America	Belize Costa Rica El Salvador Guatemala Honduras Nicaragua Panama
Europe	Albania Austria Belarus Belgium Bosnia and Herzegovina Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Finland France Germany Greece Iceland Ireland Italy Latvia Lithuania Luxembourg Malta Moldova Monaco Netherlands Norway Poland Portugal Romania San Marino Serbia Slovakia Slovenia Spain Sweden Switzerland The former Yugoslav Republic of Macedonia Turkey Ukraine United Kingdom
North America	Canada Mexico United States of America
Oceania	Australia Cook Islands Fiji Kiribati Marshall Islands Micronesia (Federated States of) Nauru New Zealand Niue Palau Papua New Guinea Samoa Solomon Islands Tonga Tuvalu Vanuatu
South America	Argentina Bolivia Brazil Chile Colombia Ecuador Guyana Paraguay Peru Suriname Uruguay Venezuela (Bolivarian Republic of)

AgriFeeds and Metadata Standards

For news items, AgriFeeds accepts the basic RSS metadata set and provides basic browsing/filtering functionalities based on it.

In terms of Events, the adoption of the Ag-Events AP standard enables AgriFeeds to provide various innovative functionalities. By just adding the location and the start/end dates for an event, users can search for information as follows:

- browse a list of upcoming events (List of events or as part of a Calendar)
- filter events by geographic location (Country or Region) (see Figure 2)
- add events to Outlook Calendar (iCal support)

- browse events by subject (covering Agriculture, Forestry, Fisheries, Sustainable Development, etc.)
- look at past events

This is accomplished by extending RSS with additional schemas. There are four pieces of extra information that are taken from the Agricultural Metadata Element Set (AgMES) namespace⁴:

- startDate
- endDate
- locationCity
- locationCountry

This is expressed as:

```
<ags:dateStart xsi:type="dcterms:W3CDTF">
2007-11-28</ags:dateStart>

<ags:dateEnd xsi:type="dcterms:W3CDTF">
2007-12-01</ags:dateEnd>

<ags:location>

<ags:locationCity>Beijing</ags:locationCity>

<ags:locationCountry xsi:type="dcterms:ISO3166">
CHN</ags:locationCountry>

</ags:location>
```

Current and Planned Functionalities in AgriFeeds

Currently, AgriFeeds comprises the following features:

- aggregation of items from strictly agriculture related feeds: the feeds are published only after approval
- bottom-up process: registration, description, categorization and tagging of the feeds are done by the owners, therefore assuring better quality
- categorization of feeds based on both a controlled taxonomy and free tagging
- subject indexing of single news items if the source feeds provide the necessary RSS or Dublin Core metadata elements
- events are treated as a special type of news and are viewable through a Calendar and can be exported using the iCal format (can be uploaded into one's own Outlook calendar).
- browsing and filtering enabling creation of custom feeds: RSS outputs are available for filtering based on language, subject cover-

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- age, source (plus country, region and dates for events).
- RSS outputs include Dublin Core elements and event specific elements (see our Guidelines and FAQs) to allow for the creation of better value-added services on the part of the final users, especially the owners of information services and webmasters.

Planned functionalities include:

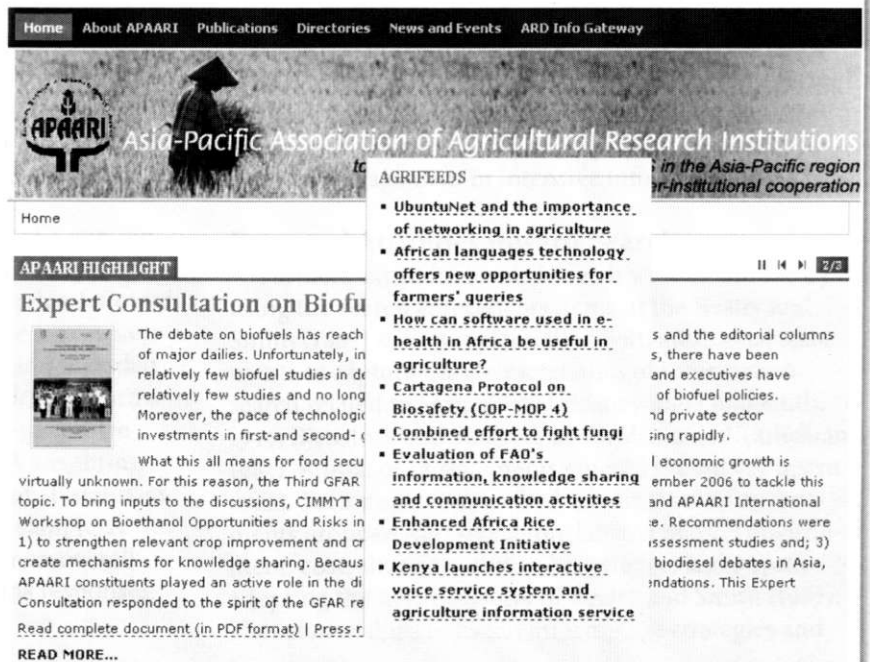
- introduction of automatic indexing for subjects to improve semantic filtering of single news items
- geographic indexing extended to news items using natural language processing and automatic indexing
- the inclusion of job opportunities as a special type of news

Conclusion

AgriFeeds is a mechanism allowing users to register their own news and events feeds for wider visibility and outreach. These news and event items can then be filtered and re-aggregated for use in feed readers or specific websites (see Figure 3).

AgriFeeds is more of an application to serve webmasters and information specialists than a web tool for end users. It amalgamates the otherwise dispersed and

FIGURE 3 – Example of feeds filters being used on a partner website (www.apaari.org)



decentralized pieces of information about news and events scattered on the web. Consequently, it allows users to make a one-stop search and filter on news and events aggregated daily from registered agricultural information sources.

Notes

1. http://www.fao.org/aims/ap_applied.jsp
2. http://www.fao.org/gi/gil/consultations/consult_infosys_en.asp
3. Web services based on the so-called Representational State Transfer; basically, functionalities that can be called through a

normal GET request to a URL with Optional parameters and that return a plain XML response. See http://en.wikipedia.org/wiki/Representational_State_Transfer

4. <http://purl.org/agmes/1.1/>

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