The use and management of RSS feeds by a network of agricultural information specialists to support information exchange among regional stakeholders in Southern Africa

Krishan J Bheenick[1] and Chandrabose Sembhoo[2]

1. ICART Project, Food, Agriculture and Natural Resources Directorate, SADC Secretariat, Gaborone, Botswana, kbheenick@sadc.int
2. Agricultural Research and Extension Unit, Mauritius, sembhoo@gmail.com

Abstract

News feeds are rapidly becoming a standard feature of websites around the world. Unfortunately the technology does not spread as rapidly to websites of agricultural institutions in the developing world, especially in sub-Saharan Africa, where the websites are all too often an enhanced version of a corporate brochure. Furthermore, institutions which have previously invested in equipment and software to host their websites may not be able to convince management to invest further to add some 'new Web 2.0' feature. The SADC Network of Agricultural Information Managers, in the process of developing the regional integrated Agricultural Information Management System (SADC-AIMS) has devised some strategies for information originating from the countries of the region to be visible on the regional agricultural portal, enabling such information also to be captured by international observatories, while also developing thematic, country-wise and regional newsfeeds for stakeholders in the region to access and subscribe to. Furthermore, the Network uses social bookmarking websites and specific tags as means of making information published electronically about agriculture in their country more visible on the web. The paper describes the various principles adopted by the network of individuals to collaborate and further network around the web tool to enhance information dissemination and exchange among their regional stakeholders but also to stakeholders beyond their region. Tools are now freely available to enable agricultural News and Events from developing countries to be disseminated using the described approach. The lessons learnt from this experience are that the new Web 2.0 tools, although powerful in their functionalities, require that people establish procedures for collaboration and coordination of their efforts around the tool in order to have the impact from a collective perspective, be it thematic, national or regional.

1.0 Introduction

The exchange of information among members of a network is today no longer dependent only on traditional emailing systems: other user friendly and more interactive ways to share information and to promote networking around knowledge themes are now available. Such recent web tools include wikis, blogs, social networks like *Facebook* or *Flickr* and social bookmarking services like *Delicious*. Furthermore, rather than users having to consult individual websites for updates, tools have been developed that enable delivery of new or updated contents from several websites directly to the web users. The information these tools harvest from the web are based on the user's preferences for the type of content and frequency of updates. A popular example of this tool, commonly known as "news feeds", is *Really Simple Syndication (RSS)* feeds.

The agricultural sector in the Southern African Development Community (SADC) region is becoming increasingly aware that, in the absence of proper communication channels, a considerable amount of agricultural information and results generated by research and training institutions is not being efficiently utilised by the National Agricultural Research Systems (NARS). Consequently, farmers in

the region, who are the beneficiaries of such information through the NARS, have in turn not been able to put these information or experiences, from the region, into use. The food security issues that emerged in 2008 have demonstrated the urge for the wealth of information generated and the lessons learnt by the NARS in the SADC Member States to be more accessible, better disseminated and used, to enhance food security in the region.

Some of the initiatives addressing this situation at the SADC level include the implementation of the SADC Agricultural Information Management System (SADC-AIMS) web portal and capacity-building among information specialists within the Agricultural Research and Development (ARD) community by the Implementation and Coordination of Agricultural Research and Training (ICART) project. The latter has exposed ARD information managers in the region to Web 2.0 tools that can be used for information exchange. The ICART project has also facilitated the establishment of the SADC Network of ARD Information Managers, members of which are also involved in the implementation of other regional initiatives, such as the Regional Agricultural Information and Learning System (RAILS) project.

As a result of capacity-building workshops, the network members have reflected upon and developed an approach to the development of information, communication and knowledge management strategies at national and regional levels (SADC, 2009a). They have also recognised the need to advocate for increased use of Web 2.0 tools to facilitate information exchange in the region. One of the tools being currently promoted to enhance agricultural information exchange in the region and beyond, to the international community, is the RSS feeds.

This paper describes how the regional network of ARD information Managers is using RSS feeds technology, made available through the SADC-AIMS portal, to generate news feeds relevant to the region. It also describes how the tools on the portal enable these news feeds to be filtered and directed to a range of users, depending on their thematic, regional and national contexts. The paper also addresses the fact that however elegant and powerful the technology, achieving success in satisfying the information needs of a varied clientele requires that the people managing the tools are themselves organised, coordinated and systematic, especially in the way the news items submitted are labelled with appropriate keywords or tags, preferably at source.

2.0 The News and Events Service of the SADC-AIMS Portal

2.1 Generation and aggregation of RSS feeds

Finkelstein (2005) defines RSS simply as being a technology that feeds news information (usually from a Web page) to subscribers, who will 'read' the news, through use of news readers or aggregators. RSS feeds are analogous to television news channels being broadcast while the reader/aggregator can be compared to a television set that tunes in to the channels. A television set is able to tune in to many channels that are being broadcast (by different broadcasters) provided the owner is subscribed to those channels. Thus, a news reader (typically on a user's computer) and an aggregator (typically a hosted application) will periodically scan several news feeds that it is subscribed to and display the updated contents.

The News and Events Service (NES) of the SADC-AIMS web portal uses RSS technology and provides a platform for the collection and display of agricultural news and events relevant to the region from various sources on the web. The SADC-AIMS NES can manage both internal and external RSS feeds.

The internal mechanism relies on News and Events items that have been entered on the SADC-AIMS web portal by its registered contributors, such as the regional Agricultural Information Managers. Typically, the contributor will access her/his country web page and will feed relevant news and events

items, which will eventually be displayed on the web portal in appropriate sections. In fact, the NES 'aggregates' all the materials entered manually from within the portal, irrespective on which page the News and Events are announced. It then makes its own AIMS-aggregated RSS feed available for users to subscribe to or to display on the portal itself, as a compiled list of most recent news and events from the SADC region. External users, such as national institutions and international organisations may also subscribe to the AIMS-aggregated news feed for filtering and display on their own websites.

The external system relies on information collected from RSS news feeds hosted elsewhere on the web to be displayed on the SADC-AIMS web portal. In this scenario the aggregator 'listens' to and downloads news feeds that the SADC-AIMS web portal administrators have identified as relevant, such as news feeds from websites of agricultural institutions in the region, blogs, Facebook accounts, international agricultural organisations and regional and international media. The aggregator then generates its own compiled RSS feeds of external feeds to the portal, for use (filtering or display) by its users.

2.2 Filtering of RSS feeds and re-generation of refined RSS feeds for the SADC region

The existence and application of standards for the format of RSS feeds enables the latter to be picked up from any source and combined with others. While feed aggregators may be useful to combine external feeds, they can also sometimes gather too much information, which then needs to be filtered before they can be used. Similarly, to ensure a harmonised input into the SADC-AIMS NES and its proper functioning, there is a need for coordination of the diversity of News being broadcast. Human intervention and selection of news items for display on the relevant parts of the portal would be useful but is not practical. The most appropriate method available that can be automated is through the use of keywords which can form the basis of filtering.

A recent version of AIMS-NES software now integrates a 'news mastering engine': a tool that combines the functionalities of aggregation, filtering and generation of RSS tools. Thus, the NES can **aggregate** contents from a wide array of information sources on the web, which can then be filtered to remove duplicates and ensure collection of relevant and concise content, based on rules set with text, categories or date/time ranges. The aggregated content can then be delivered to the NES users or subscribers through new newsfeeds, or displayed on specific pages on the web portal. Another function that has been included in the NES is the use of 'Tags' (used in social bookmarking websites) to label News and events. Thus, in addition to filtering for keywords in the content of the news items, filters can also be applied to Tags associated with the News and Events.

Therefore, the SADC-AIMS NES filters external feeds for certain keywords or tags that are relevant to the SADC context such as the names of the SADC Member States, 'Africa', 'Sub-Sahara', 'SADC' or themes such as 'Agriculture', 'Land', 'Research' and 'Extension'. The filtered news and events are then turned into news feeds that can then be posted on the relevant thematic or country web pages. These new refined feeds are also available for external users of the portal to subscribe to.

To enable a more comprehensive content filtering, the network of ARD Information Managers has proposed a keyword protocol cascading from a regional to local level geographic keywords, followed by main and sub-thematic terms. Thus, the structure of keywords or tags would be entered as follows: Region, Country, Institution, Theme, Topic, Subtopic1, Subtopic2, Subtopic3 and so forth. For example, an article about cheese production in Mauritius could have the following keywords entered as tags: SADC, Mauritius, AIMS, AREU, Livestock, Cattle, Dairy, Cheese Production.

Furthermore, tagging enables other contributors to further categorise contents available on the SADC-AIMS web portal according to the relevance to their country or thematic stakeholders'

information needs. For example, a News item submitted and displayed on a particular country page could also be considered relevant for a second country, and by way of adding a 'tag' the news item could also be included on a refined news feed for the second country.

Another advantage that the use of 'tags' offers is the ability to combine the use of social bookmarking sites, such as Delicious, which allows web contents to be tagged with similar keywords as those used on the SADC-AIMS NES. Thus, external web contents that may not already be in RSS feed formats can still be linked to the AIMS portal feeds, through social bookmarking tags, which can be filtered for and turned into RSS feeds by the social bookmarking websites. It also enables external contributors to the AIMS portal, who may not be registered on the portal, to suggest contents that could be considered as news to be displayed.

3.0 The human network: driver of the regional News and Events Service of the AIMS portal

The goal of the NES of the AIMS portal is that stakeholders in agriculture in the SADC region will consider it as one of the preferred sites to access regular, updated and quality news about agriculture in the region, both from internal and external sources. The concept of the News and Events Service of the AIMS portal and the range of news feeds mastering it enables are illustrated in Figure 1. Coleman and Levin (2008) state that such "Collaborative 2.0 tools" require the involvement of technologies, processes, and people in attempts to exchange information and knowledge. In this context, the above has shown that the technology can already support the achievement of the goal. Therefore, the success of the NES is more dependent on the appropriate people and processes being in place.
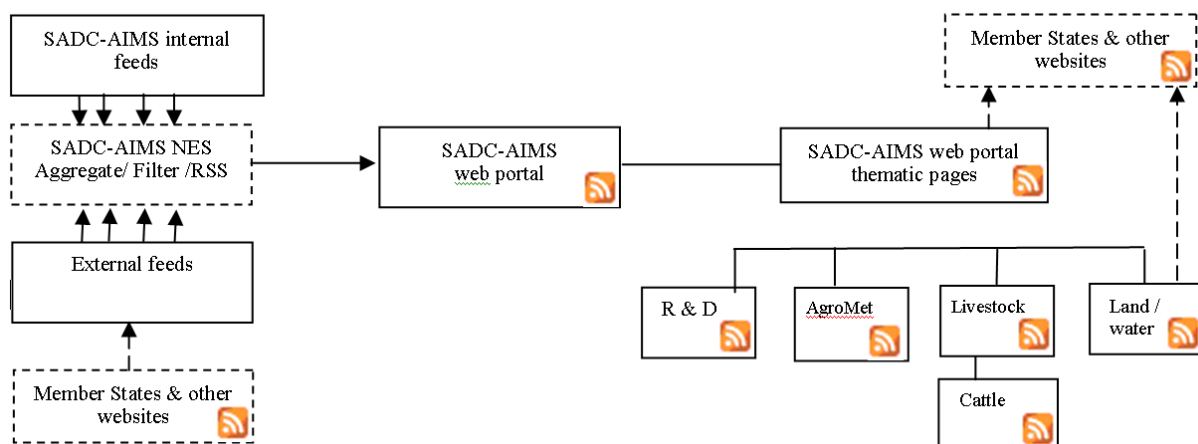

Fig. 1. SADC-AIMS NES at work: filtering of RSS feeds and re-generation of refined RSS feeds for the region

The SADC Network of ARD Information Managers, through its capacity-building workshops, has reflected on the overall theme of Agricultural Information, Communication, and Knowledge Management (AICKM) in the SADC region and has developed its proposed approach to address the challenges. The network has realised that the improvement of information and knowledge sharing in the region will require a constant, coordinated, supportive effort on their behalf to achieve the following objectives:

a) Identifying the appropriate collaborative tools that address current needs for AICKM in the SADC region
b) Making the appropriate information accessible,
c) Building capacity of their stakeholders to use the technology that opens access to the information,
d) Engaging the stakeholders in the process, and support, of knowledge sharing, and,
e) Celebrating the benefits of information and knowledge sharing with their stakeholders

One of the initiatives the SADC Network of ARD Information Managers has undertaken is to support the establishment and management of the News and Events Services of the AIMS portal, especially to focus on 'people' and 'processes'. In this context, they have adopted several strategies, described below, to accompany the development and management of the NES in the region.

4.0 Strategies for promoting the sharing of news and events information in the SADC region

4.1 Advocating for the adoption of RSS feeds as a tool for information sharing

The SADC ARD network members have resolved to advocate for the adoption, at institutional and national level, of collaborative tools available from the Web 2.0 in order to promote and harmonise information sharing. Whenever the opportunity exists for the creation or upgrading of internet based communication tools at institutional level, the ARD Information Managers will offer advice and promote the introduction of features that integrate Web 2.0 technology.

Although RSS technology is a feature of new versions of content management systems, the network plans to advocate through demonstration of the tool, which is already available for use on the AIMS portal. The practical application of this technology can be easily demonstrated to peers at local level simply through the use of an internet connection; contributions of News and Events can follow almost immediately. In fact, institutions in the region can already benefit from RSS feeds even if their institutional websites do not have such a feature.

Network members are setting the example by submitting local news and events to the portal. Information that is currently being fed is related to publication of research papers, extension materials, and news and events released by local official sources and media. The feedback received is used to fine tune and improve the web portal.

4.2 Mobilising human resources to drive the process of information sharing

In the context of News and Event information sharing, every stakeholder has to be considered as a potential contributor to the RSS feeds. As mentioned above, should the stakeholder not have the means to generate their own institutional feed, the SADC-AIMS NES platform can already be used to broadcast the information. The contributor must be a registered user of the web portal to submit items to the NES, but more importantly, every contributor needs to be familiar with the user interface and the way it processes the information provided. To enable this process, at least two members of the network from each SADC Member State have been trained on the SADC-AIMS NES such that further knowledge sharing about the NES and RSS feeds can take place, at national level, with thematic specialists who will in turn further contribute to the SADC-AIMS NES. Training is especially important in the context of 'tagging' the News and Events items with the appropriate words, such that they can be easily categorised and end up appearing in the appropriate pages on the portal. ARD Information Managers will be called

upon to advocate the NES and to share knowledge on RSS potential and to expand the network. Eventually, this network of contributors will be self sustaining and drive the SADC-AIMS NES to become a platform for regional news and events sharing. Each trained contributor is currently requested to submit at least two News and Events items monthly.

4.3 Developing and managing guidelines for the creation of news feeds in the region

The network has already proposed a hierarchical system of keywords or tags to guide the description of the RSS feeds. Members of the network are already testing this tagging system and the keyword structure is continuously being refined through discussions. While the use of tags allows for flexibility of the system to have a larger vocabulary of keywords, there is a need for a structure to manage the introduction and ensure consistent use of tags. Therefore, in addition to guidelines on the use of tags, there is a need for the contributors of News and Events in the region to develop their own mechanism for coordination of their efforts in managing the NES. This is important especially if the network would like to generate new refined thematic feeds based on the news being shared through the AIMS NES.

In addition to individual training sessions, a series of guides will be developed by the network to encourage and shape the submission of News and Events from Member State contributors; to inform about the use of tags, and to educate about the way the NES processes the News and Events items submitted. These guides will themselves be subject to updates, which can be announced through news feeds on the AIMS portal.

The network will also have to find appropriate ways to receive suggestions for additional tags, external feeds and filtering options from the contributors and user community of the SADC-AIMS web portal. Such a transparent approach will be required as the success of the NES can only be achieved through concerted efforts by people in the region to contribute News and Events to the service and ensuring that the NES screens external system for news relevant to the SADC region.

4.4 Sustaining momentum of the network activities in relation to RSS feeds

It is a challenge to continue building on what has been initiated during workshop discussions, especially when members are scattered across the continent. In order to keep the members of the network in touch with each other and allow for the discussions to continue, the networking process operates through the use of the Dgroups platform (dgroups.org). The platform enables group discussions on various issues (threads), exchange of ideas, tracking of progress, coordination of activities, but more importantly the sense of belonging to the network. Thus, the network has tried to keep the bonding that occurred during the workshops ongoing in the virtual world: issues are continuously posted and follow-ups made by members within respective threads. The network members successfully made use the Dgroups platform for joint drafting and reviewing of 'regional' papers in preparation for a pre-conference workshop in the context of the IAALD Africa Chapter Conference in Ghana in 2009 (SADC, 2009b). The success, culminating in a physical meeting of the members of the network at the ensuing workshop, further motivates and enhances bonding among network members. The network proposes to adopt a similar approach to the support of the development of the NES: by making use of the collaborative tools offered by platforms like Dgroups and other functionalities of the AIMS portal itself, to keep networking around the technology, processes and people issues in relation to the SADC-AIMS-NES.

5.0 Discussion and conclusions

The analysis of the use of RSS feeds in the context of the SADC-AIMS-News and Events Service has demonstrated that the Agricultural Information Managers in the region do not have to wait for their institutional websites to implement RSS technology: they can already start exchanging valuable information locally or internationally by feeding the NES with information, through the SADC-AIMS web portal. The RSS technology is a simple yet powerful tool to access updated information from NARS in the SADC region.

The Network of ARD Information Managers has adopted a multi-pronged strategy for the use of RSS feeds to exchange News and Events information in the region. It has also started developing guidelines for the implementation of RSS feeds on the SADC-AIMS web portal by the members of the network and other contributors who are expected to join the initiative. However, the current challenges are related to the way in which the network of individuals interact online to coordinate their actions, collaborate through web-based tools and reach consensus on the guidelines to be adopted for further implementation of RSS feeds for information exchange.

The network has only just embarked on this online adventure and its success will be reflected in the availability of regional news and events feeds from the SADC region on the AIMS portal. The experience gained by the individuals and the network itself should provide a better insight into online collaboration through Web 2.0 tools. Whatever the outcome of this particular network's initiative, their efforts to develop guidelines and a system for tagging RSS feeds is worth pursuing, especially to accompany further development of the NES

6.0 Acknowledgements

7.0 References

COLEMAN D, LEVINE S, 2008. *Collaboration 2.0: Technology and Best Practices for Successful Collaboration in a Web 2.0 World.* Happy About, USA. 294 pp.

FINKELSTEIN, E., 2005. *Syndicating Web Sites with RSS Feeds for Dummies*. Wiley Publishing Inc., Canada. 326 pp.

SADC (2009a) Proceedings of the ICART Regional Workshop on Agricultural Information, Communication & Knowledge Management in Agricultural Research and Development, 26-29 May, Gaborone, Botswana [Available online at : http://www.sadc.int/fanr/agricresearch/icart/meetings/ ICARTREGIONALWORKSHOPONAICKM.pdf]

SADC (2009b) Pre-Conference Workshop on "Sharing of Agricultural R&D Information-Experience of the NARS", jointly organised by the SADC ICART Project, RAILS, FAO and the IAALD-Africa Chapter, in the context of the 2nd IAALD-Africa Chapter Conference, 12-13 July 2009, Accra, Ghana [Available online at: http://www.sadc.int/fanr/agricresearch/icart/meetings/ IAALD-AFRICA-PRECONFERENCEWORKSHOP.pdf]