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# FragForNet, a Content Management System (CMS) to optimize the information and the communication between a North-South's network

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## Abstract

FragForNET is a North-South network platform to communicate, disseminate and archive information and knowledge on forest fragmentation and biodiversity loss <http://fragfor.net.grenoble.cemagref.fr/>. This network intends to become a portal for researchers, stakeholders, policy makers and the public to exchange ideas, knowledge, data, experiences and results on the loss on biodiversity in the remaining native forests of South America. The activities in relation to the spread of information and access to documentation focus on two main aspects: development of information access and communication tools and enhancement of the identification of Documentary Centre's and specialized libraries by the creation of a common directory. Actions are being done to contribute to an information portal in relation to forest conservation (SIDALC).

## Résumé

FragForNET est un réseau Nord-Sud créé pour communiquer, diffuser et archiver les informations et les connaissances portant sur la fragmentation forestière et la perte de biodiversité. Ce réseau cherche à devenir un portail permettant aux chercheurs, aux responsables et au public d'échanger des idées, des connaissances, des données, des expériences et des résultats sur la perte de biodiversité dans les forêts natives résiduelles d'Amérique du Sud. Les documentalistes organisent l'accès aux connaissances. Ils identifient les ressources spécifiques répondant aux besoins des utilisateurs du réseau. Des actions sont menées afin de contribuer à un portail d'informations sur la conservation des forêts (SIDALC).

## Introduction

FragForNet is a research and information exchange network for a community working on forest conservation issues. FragForNet also serves as a network's communication platform. The network aims to provide reliable and fast information to the community working on native forest fragmentation.

The main needs that were identified behind the network are based on communication and exchange together with the need to overcome the lacks in documentation access. The network also serves to link researchers and decision makers on issues related to conservation and management. This network does not receive any financial support and is maintained on voluntary bases from a truly bottom up approach under the interests of users, information professionals and researchers.

The inspirational ideas behind this network are found on the framework of the "Paris Declaration for the biodiversity" (Paris Conference, January 2005). As the Declaration states, we aim at bringing researchers together from developing countries and reinforcing the links between the North and South in order to work towards an improved protection of forest biodiversity in particular.

The overall goal of creating a network of experts working more precisely on forest fragmentation, biodiversity loss and conservation target three main issues:

1. Improve the knowledge and the relevance of the indicators that can be developed and used in relation to forest biodiversity loss in native forests.
2. Facilitate building capacity not only in monitoring and evaluating forest fragmentation but also on forest restoration to mitigate the existing trends on biodiversity loss.
3. At this stage we focus on the South American region, but we would like to see this effort expand to other key regions where native forests still persists.

Our aim is to work on native forest that has a particular important biodiversity value and that has been neglected up to date within the International arena. It is only with a proactive co-operation North-South that we will be able to reach the targets set up by the CBD 2010 ( EC 2001a, b; UN/ECE 2003) and reinforced during the Biodiversity Conference in Paris (January 2005).

An information portal was launched to share and disseminate information. This portal is based on a CMS technology, Zope Plone. In this paper, through the description of tool, we show how a CMS suits FragForNet in terms of communication and sharing tool, and more generally on how technologies like Web 2.0 can serve as a tactical plan to improve the dissemination of research results and give greater visibility to scientific publications. We also present limitations of this work.

## **Network Members**

The network, build up on voluntary bases, at present is composed by 42 organizations and research institutes from 17 countries. It comprises experts and researchers from: 15 universities, 4 public institutions, 2 NGO's, a National park and 2 Forest secretaries at the Ministerial level, and 15 specialized libraries and documentary services. Countries that participate up to date are: Argentina, Austria, Brazil, Bolivia, Canada, Chile, Costa Rica, Denmark, Deutschland, France, Japan, New Zealand, Paraguay, Pakistan, United States, and United Kingdom.

## **FragForNet Information network**

The information network aims to enhance the relationship between North-South information professionals working in biodiversity conservation and sustainable development. We would like to improve solutions to work together librarians and researchers in this area.

Information has a significant role in sustainable development. The methods for handling information including collection, storage, organization, access and use of data are the basics for action on the Agenda 21, chapter 40 and in the principles of the Rio Summit. Moreover information is a tool for sustainable development. (Habib, Baltz, 2008)

FragForNet librarian's group is advocated to provide support on information systems and documentation. The activities of this support group focus on: i) development of communication tools, ii) facilitation of information access and iii) enhancement of the identification of documentary centres and specialised libraries by the creation of a common directory. Librarians within the network, organise the access to knowledge. They target the specific resources for users needs within the network.

The activities in relation to the spread of informations focus on the development of a portal. The platform is a tool to archive and to retrieve information in their research's field, but also this portal should be a communication media for different actors and decision-makers in forest fragmentation and biodiversity loss. These actors should easily find the experts that will contribute to answer their queries.

## Communication tool: CMS Zope Plone

### *Why Zope Plone?*

This portal is a CMS Content Management System. A CMS supports creation, management, distribution, publishing and discovery of information. It covers the complete life cycle of the pages on one site, from providing a simple tool to create contents, through to publishing, and finally to archiving (Robertson, 2003). FragFornet is built up using two well known tools that are developed together Zope-Plone. Plone is released under the GNU General Public License (GPL). It is built on the Zope application server, which is written in Python. Plone is made such that all information is stored in Zope's built-in database. It has a friendly interface, a WYSIWYG editor and a search engine.

The Plone project began in 1999. The creators were Alan Runyan, Alexander Limi and Vidar Andersen. Very quickly it became in one of the most popular CMS. In 2004 a Plone foundation was created to promote the use of Plone.

This particular CMS was chosen because it was the same tool used to develop the Websites in Cemagref, our institution. Therefore, it was possible to obtain technical advice and support when needed.

Moreover Zope-Plone is also very well implanted in South-America <http://plone.org/countries/conosur>, where it has a strong community of users. We can give two examples for this: a South America Plone Symposium is held each year, and the PloneGov a cooperation project for e-government initiatives in Latin America, won the biggest French award for open source project called "Grand prix du jury des Lutèce d'Or" 2007.

One of the CMS asserts is the easy setting of publishing workflow. This system allows building a workflow so that some contents are accessible by anonymous users, while other content are only accessible by "logged in" users, and other contents are only accessible for members of a group.

It is possible for a logged user to add or modify content within folders. Moreover the administrator can setup several groups each having access to different sets of private folders.

For FragForNet three workflows have been created. Anonymous users can access the published information. Members' users are allowed to add or modify content within their own folders; they can ask the editor to publish the information. Published items can be displayed to be visible for anonymous users or only for members. All members have access to restricted intranet area. Editor's users accept, publish or avoid member's items. There are two editors that have the rights for the portal administration.

A special workflow for the library network allows users to submit and to edit a document if they wish. To help themselves they can consult a "how to" document. One librarian's session training has already taken place in Argentina.

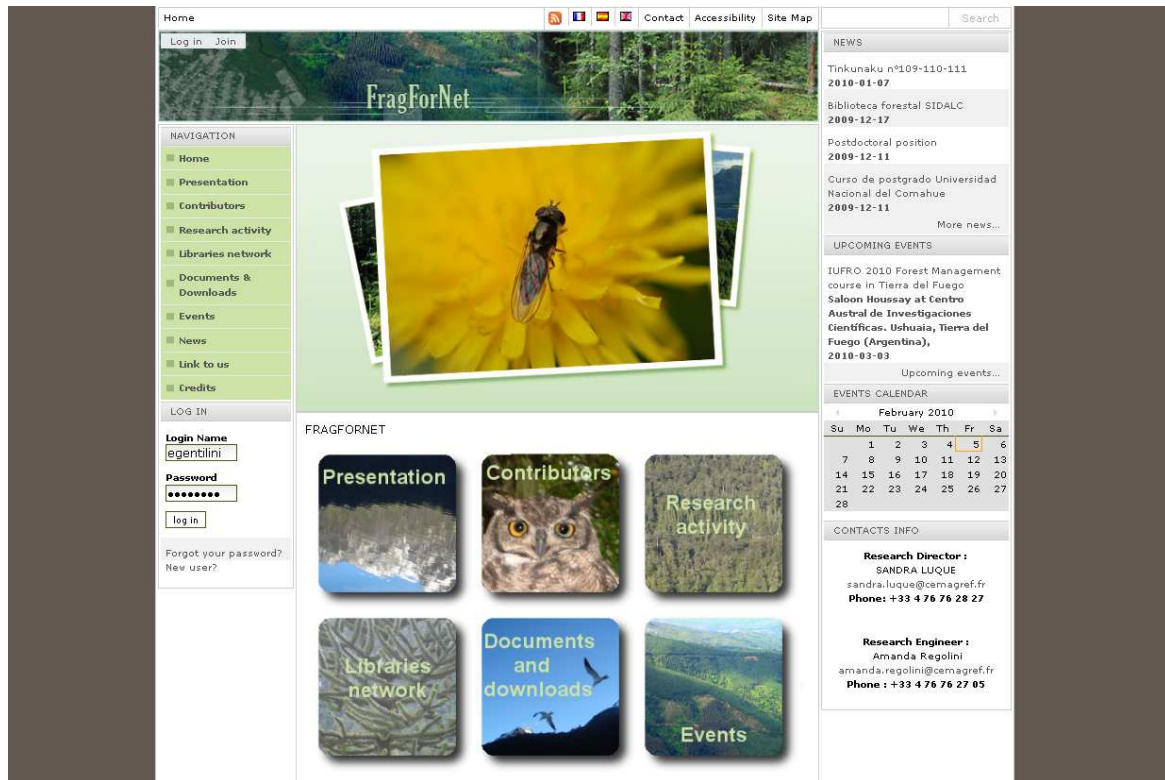


Fig. 1. Opening view of the FragForNet portal (as on 5 February 2010)

### Contents

The website was published on February 2008. Fragfornet website consists of an e-mail moderate list to exchange information, users' folders to enter local information, and a portal section. The moderated mailing list and the portal are the two main tools to promote information.

The mailing list was built two months after the first meeting in Argentina, 2006. Through the CMS registration, the member is registered in this e-mail list server. Members receive information on upcoming events related to the aims of the networks. Everybody is invited to promote scientific or stakeholders events and related publications. This way the listserver allows the community to keep up with news about the latest publications, software's, events and also job openings and projects funding opportunities.

Using only a web browser, members store data in their personal folder. Then, information is edited often as news. Nowadays, member's folders are used to update the website as an intermediate step.

Portal's information is divided into several sections. They are: news' section, upcoming events, information about research activities and libraries network, and documents and downloads which contains related publications.

Another main point is that is a multilingual website: all sections are translated in English, French and Spanish.

Members within the network have their own projects published in their laboratory web portals, or personal web pages. Why are they willing to collaborate in this project? It is important to have a look at their scientific communication behaviour. This particular group of researchers knew each other and had already worked together before creating FragForNet. We named those users the co-ordinators.

### *FragForNet CMS member typology*

There are three typologies of users: co-ordinators, librarians, researchers and students.

Researchers and students are allowed to contribute to the portal and to share information but it is not their main target. We consider here that this group is the typical user group that benefits from the network.

Librarians' first task is to meet the needs of researchers. According to their main activity, they use and test Web 2.0 technologies in order to find new tools for researchers. They are also used to share information. Librarians don't have problems in contributing directly in the portal with CMS. These users already have their special workflow.

Co-ordinators are the producers of the main information, but also stimulate the community to participate by sending their needs and informations. At the moment, they use an intermediate step to contribute to the portal. They send their information by email to editors or put their publications in their personal folders. They ask editors to store files or news on the portal. The next step could be to contribute directly by using the CMS technology. This is to write directly in the WYSIWYG editor and propose the article to the editors. Training sessions will be needed to reach that step.

Several studies show that researchers still need to appropriate Web 2.0 technologies before using them (Belin, 2003) and sometimes they consider it as an additional and free work (Le Deuff, 2006). Nevertheless, scientific applications of Web 2.0, like scientific weblogs, are increasing (Gallezot, 2009). If we have a look on other sharing tools and volunteer-based information platforms, as Del.icio.us or Wikipedia, researchers use them. These giants are as big as they are because the community is wide (we're talking about millions of people). In our network, the percentage is slightly the same but the community is smaller. So, there are only a few researchers in the network who store their information on the CMS.

To sum up, co-ordinators, librarians and researchers are producers of information. They don't all contribute directly in the CMS. But the main point is that they participate at their own rate. In Wikipedia's community, correction spelling is at least as important as publishing an entire webpage (Salaün, 2009).

### **Some Achievements and results**

After three years of existence, the number of members has increased from 40 to more than 130.

It is important to point out the workshops already organized by the network: Grenoble, France and Bariloche, Argentina 2006. Under the scientific authority of IALE, International Association of Landscape Ecology: Wageningen, Netherlands, 2007 and Campos de Jordao, Brazil, 2009.

Members of FragForNet have also published a book on the subject in 2007 and one chapter for a Springer's book has been co-authored in 2009.

Some actions of the documentary network are the exchange of experience about different works in progress, especially those helping cope user needs. We also exchange about different new tools. FragForNet librarians' have already had four working meetings and a workshop at the IALE Conference in Campos de Jordao, Brazil, 2009.

One ongoing project in order to enhance the identification of documentary centres and specialised libraries is a directory for libraries having collections on this subject. The directory is being created; the structure is available in the librarian folder. Each library must complete the information about the services they propose.

In 2009, two actions have been done to improve the information access in collaboration with IUFRO, (International Union of Forest Research Organizations) and SIDALC, (Sistema de Información y Documentación Agropecuaria de las Américas).

The collaboration with IUFRO is a challenge to promote our information via GFIS. FragFornet CMS feeds were linked by the Global Forest Information Service (GFIS) at [www.gfis.net](http://www.gfis.net).

SIDALC has achieved a forest portal; it can be consulted at <http://orton.catie.ac.cr/mbforestal.htm>. Actions have been done to contribute to this information portal about forest conservation. The new forest portal is a result of query that we made to SIDALC. In order to prepare the references export, FragForNet has provided a thematic word list.

## Conclusion

Two future improvements about FraForNet portal are being studied. The first one could be using it in a more collaborative way. Researchers don't contribute actively to the CMS for the moment. But they use others Web 2.0 tools such as YouTube or Slide Share. One future action will be to encourage contributions. The second one is to improve the portal's visibility. A search engine optimization (SEO) has started in February 2010.

The librarian network may collaborate in the following actions: we must know the users' information needs, for this purpose a survey will be planned. Publishing needs must also be discussed. This way, librarians can find tools and open access services.

By cooperating together in a flexible network we intend to develop actions according to the priorities of regional, national and North-South's interests in order to implement an effective information access for experts working on forest biodiversity loss.

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## Key Words

Experts network, native forests, forest fragmentation, South America; biodiversity conservation; CBD 2010, information, communication, platform, North-South experts, Library information Network, open-access, conservation ethic.