Content Management System for Asia-Pacific Regional Information on Aquaculture

Vimolrat Ngamaramvaranggul

Asst. Prof Dr.
Department of Mathematics
Faculty of Science
Chulalongkorn University
vimolrat.n@chula.ac.th

Yoothana Suansook

Information and Communication Technology
Specialist
Network of Aquaculture Centres in Asia-Pacific
ict@enaca.org

ABSTRACT

The Network of Aquaculture Centres in Asia-Pacific (NACA) is an intergovernmental organization, at present with 15 member-governments and 4 participating governments. Organization aims to expand aquaculture development in the Asia-Pacific region by promoting coordinated research, training, information and expert exchange among the centres and institutions associated with the Network.

With the development of the Internet, Information on aquaculture can disseminate and exchange though this channel via website. However major constraint to this is how to organize and manage the growth of the website content, the cost of building supporting system. Systems that designed for managing the content of a website are called (1) Content Management System (CMS), these consist of two components: (2) Content approval application and content submission application. Content approval application consists of a module that allows the author to manage the creation, modification and deletion of the content from the website without Hypertext Markup Language knowledge. And content submission application allows members in the community to submit content and stories and discussion to the central system.

NACA have adopted to use this CMS software that called "XOOPS". XOOP is a dynamic OO (Object Oriented) based on open source portal script written in PHP language. This software also has multilingual modules that are an idea choice for use in regional dissemination and exchange aquaculture information. The core feature of this software is that it can support developing scalable dynamic community websites.

The supporting modules for information exchange i.e., RSS (RDF Site Summary) News feed and XML elements have been discussed.

Keyword: Content Management Software, Aquaculture, Network, Object Oriented

1. Introduction

The Network of Aquaculture Centres in Asia-Pacific (NACA) began in 1980 as an UNDP/FAO regional project aimed at expanding aquaculture development through regional cooperation. The project to establish NACA was a response to the recommendations endorsed by the FAO Technical Conference on Aquaculture held in Kyoto in 1976.

The Network of Aquaculture Centres in Asia-Pacific (NACA) is an intergovernmental organization; at present have 15 member-governments, and 4 participating governments. Recently the Islamic Government of Iran has formally applied for NACA membership, NACA aims to expand aquaculture development in the Asia-Pacific region by promoting coordinated research, training, information and expert exchange among the centres and institutions associated with the Network. The activities of the institutions are coordinated and interlinked

NACA already shown that a functional network mechanism can solve the basic shortcomings in centralized research programs, these include

1. Duplication of efforts,
2. Expensive method of organizing research,
3. Mismatch between technologies developed and socio-economic circumstances of clients,
4. Inadequate interaction among research and development workers,
5. Weak coverage of diverse farming systems. In the context of diminishing aid to Asian aquaculture and limited national resources, a functional network avoids investing large capital and operating costs for setting up a new institution and effectively utilizes scarce national resources and donor funds.

Examples of training issues conducted by NACA include the is organizing of a special training course on catfish breeding and culture – with the DOF Thailand -- for five Ugandan farmers and government personnel. A study tour of Thai aquaculture was also arranged for seven Australian aboriginal fisheries personnel from the Kimberley area in West Australia

NACA was also requested by China to help organize a training workshop in Guangdong on product quality and safety control in aquaculture. Other notable programs were conducted for Indian, Bangladeshi, Malaysian, and Vietnamese personnel including farmers, hatchery operators, extension technicians, and professionals. In October a study tour to Thailand and Malaysia was arranged for the Minister of Fisheries and Livestock and Fisheries Director General of Bangladesh. Towards the end of the year, NACA arranged a study tour program in Thailand and China for the Fisheries Secretary and the national project director of a UNDP-FAO coastal fishing community development project in Bangladesh.

2. NACA Publications

NACA regular publicatins include Aquaculture Asia Magazine, available online, Electronic Marine fish Newsletter, the Aquatic Animal Health , Aquatic Animal Pathogen and Quarantine Information System - Asia or AAPQIS-Asia. AAPQIS is a collection of scientific literature, detailing the global occurrence of pathogens and diseases of aquatic animals. The system includes mapping and regional cross-referencing tools to help in the prevention and spread of pathogens and diseases, Other publications include Support to Regional Aquatic Resources Management (STREAM) which focuses of livelihood and rural development, and the Shrimp Aquaculture Management which include Consortium of Shrimp Case Study and Shrimp Certification. All of these publications are available for download in electronics format as Portable Document Format (PDF) from the NACA website at www.enaca.org

3. Why not use HTML format ?

Many of NACA 's publications are presented in PDF rather than HTML.It's much better and convenient for end-user to obtain the whole book in one click. Examples of these popular publications available for download are "Asia Diagnostic Guide to Aquatic Animal Diseases" is comprehensive aquatic disease guide. This covers economically significant diseases of mollusks, fish and crustaceans. And contains information on laboratory and diagnostic techniques, causative agents and distribution, host range, clinical aspects, screening methods, diagnostic procedures, modes of transmission, control measures. Also includes contact details for technical support services throughout the region and national health coordinators. Shrimp Farming Case study there are many example of case study available i.e., "Shrimp Aquaculture in Africa and the middle East, The Current reality and trend for the future", "Australia: The Environmental Management of Shrimp Farming" and other place around the world.

Title	Hits
Farming freshwater prawns: A manual for the culture of the giant river prawn M. rosenbergii	514
Thematic Review on Coastal wetland habitats and shrimp aquaculture	166
Shrimp Media Monitoring No. 1: January 2004	145
Draft Protocol for Sustainable Shrimp Production	132
Shrimp Media Monitoring No. 10: August 2003	126
Belize: Evaluation of Belize Aquaculture, Ltd. - A Super-Intensive Shrimp Aquaculture System	98

Fig. 1. Number of download of publications on Shrimp Farming and Environment

Most of the publications that are available is in PDF format. Since PDF format seems to be de-facto standard for the secure and reliable distribution and exchange of electronic documents on Internet. Figure 1. Show to popular download document on Shrimp Farming publications

4. NACA and IT Facilities

NACA have join IT Agriculture Forum arranged by the National Electronic and Computer Technology Centre of Thailand (NECTEC). Many project initiate by NECTEC i.e., Field Server Technology which can be use in aquaculture and monitoring of aquatic environments. The field server is a small, autonomous device that can collect environmental information in remote locations for extended periods, returning the data via mobile phone. It has many agricultural applications. NECTEC has agreed to provide field servers to support a number of field trials in at least four areas with Thai Department of Fisheries.

NACA's internet connectivity also provided by the National Electronic and Computer Technology Centre of Thailand (NECTEC). With these facilities, NACA has installed web server within the Secretariat, obtained through the project International Seafood Trade: Supporting Sustainable Livelihoods Among Poor Aquatic Resource Users in Asia. This is being used to host NACA's website, email and email newsletter facilities,

5. Content Dissemination on Aquaculture

With the supporting of Internet connectivity from NECTEC, Content disseminate on aquaculture i.e., Shrimp Farming Case Study, Development of a Regional Research Programmed on Grouper Virus Transmission and Vaccine Development and Asia Diagnostic Guide to Aquatic Animal Diseases and other NACA 's Publications and discussion forum are now feasible. The NACA Web site now has development the regular intensified news reporting activities, and a new web site established for exchange of information on shrimp certification and eco-labeling. The certification site is intended to provide members with latest information on certification of shrimp aquaculture products. The media news was strengthened, and expanded to provide coverage of the US anti-dumping case.

6. Why the need for a Content Management System?

The meaning of aquaculture, usually referred to as fish or aqua farming, which is the all about cultivating aquatic animals and plants in fresh or marine waters or even blackish water (the mixing of fresh water and salt water)

Aquaculture used to be regarded as being in its infancy compared to crop and livestock husbandry and capture fisheries. Now is has matured into a better-organized economic sector in most parts of Asia. Asia dominates the world in aquaculture production and is extremely diversified in the number of species cultivated. Many governments place priority on aquaculture development, however

there are various threats and constraints to its growth. As aquaculture grows so does the amount of information about it and there is a need to manage this rapidly growing resources.

7. What is Content Management System

A content management system (CMS) is a system that can facilitate and organize collaborative contents creation. CMS consists of two components: Content approval application and content submission application. Content approval application consists the module that allows author to manage the creation and modification and deletion of the content from the website without Hypertext Markup Language knowledge. Any news or articles can be entered as plain text, perhaps with additional markup and fields to indicate where other resources i.e., download files and pictures should be placed. The system then uses a template and standard rules to style the content, which separates the display from the actual content. This has many more advantages than traditional editing and format the content with a HTML editor. Content can grow much more rapidly and formatting is much more consistent. We can also create the archive or repository of a large collection of publications with a content management system.

8. CMS for NACA Community Website

The long-term goal of eNACA is to establish an 'Online Community' for the network. At present participants are scattered across 15 member and 6 other countries and it is difficult for them to collaborate or to find out what others are working on. To solve this problem the NACA website has been rebuilt as a 'virtual place' where network participants can 'meet' colleagues in other countries, discuss ideas, seek advice and share local information with the outside world. This has been made possible by using the freeware Content Management System called XOOPS, which provides number of special additional features. The new website allows visitors to seek the advice of their colleagues and discuss issues online while drawing on a rich supply of news and full-text publications (currently 430). The new website marks the completion of the infrastructure required to support an online community of NACA participants. The next phase of our work will focus on engaging NACA centers and personnel in the online network.

9. Type of CMS

There are an abundance of CMS software available on Internet. Which can be categorized by system requirement or classified by whether it is commercial software or open source software. Examples of CMS are Apache Cocoon ,Apache Mason ,Jakarta Slide ,AxKit ,Krysalis Foundation ,Midgard, Microsoft Content Management, OpenACS ,Slither ,Tea Trove ,Zope , Plone, CocoBlog, Cofax, DBPrism CMS, eZ publish, Drupal, SPIP and XOOPS

We have investigated on some of these software options. Some CMS software were quite complicated to use, but we focus on Open Source software rather than expensive commercial software. We adapt to use XOOP as Content Management software for NACA website. As the system requirement only needs Apache

Web server and MySQL as a backend database and it is as open source software base. System can managed and administrate through web browser and support workflow process. Content can be submitted in plain text using form interface. Software is modular in design and written in Object-Oriented style. Many add on module available for use and support multilingual. Software can install on any platform that supports these requirements.

Major benefit is template-based publishing. XOOPS software allow user to customize the appearance or themes and format for display using template and cascade style sheet.

NACA have 7-difference program on Aquatic Animal Health, Highland Aquaculture, Marine finfish Aquaculture, Shrimp farming & the Environment, STREAM, Trade and Training. Since software control the appearance of the screen into 4 portions as a block, which consists of Left block, Right block, Header Block, and Bottom Block. So, we need to have different title banner for different NACA's programmed. Then we just modify header block. Software has structure that the contents are separate from display format. Then we can achieved those requirement by modify tiny part on template and themes. In order to place all the content in to the website, First of all we have to create category or topics and subtopics for specific program. Then populate contents to each of them. By just cut and paste from the old website which stored in normal HTML format. After that website is ready to launch.

10. How to obtains Open Source software ?

SourceForge.net is the Open Source software development website, with the largest repository of Open Source code and applications available on the Internet. SourceForge.net provides free services to Open Source developers. Many CMS open source software also available from this repository include XOOPS.

11. System Requirement

Linux

Linux is a free Unix-type operating system originally created by Linus Torvalds with the assistance of developers around the world. Software developed under the GNU General Public License , the source code for Linux is freely available to everyone.

Apache

The Apache HTTP Server is web server that most popular software is available from http://www.apache.org/ This project is an effort to develop and maintain an open-source HTTP server software product for various modern desktop and server operating systems. The aims of this project is to provide a secure, efficient and extensible server that provides HTTP services with the current HTTP standards.

PHP

PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. Software function as medium between Web server and external program call. Software also bundles in most Linux distribution.This script language is also Open Source software available at http://www.php.net/

MySQL

MySQL is Open Source relational database software which is available under GNU General Public License (GPL). Software is also bundle together with Linux. Software also support standard Structure Query Language (SQL).

XOOPS

XOOPS is a dynamic OO (Object Oriented) based open source portal script written in PHP language. XOOPS is the ideal CMS tool for developing small to large dynamic community websites, intra company portals, corporate portals, weblogs. Software design in modular format. Basic functional module consist of news, download, poll, search and discussion forum. There are many extra module that are available to integrate into i.e., Chat room, Contact Database, Calendar, WAP for mobile device and system monitor. Software available at http://www.xoops.org

12. RSS /XMS News feed

RSS is a Web content syndication format. Which stand for Really Simple Syndication.

RSS is part of HTML format that defined as XML for news feed. RSS is use for format the content of web sites for syndicate content via news aggregation tools and services. Syndication benefits to the users by not to visit many web sites at a time to see what's new, they can see all the headlines or brief article summaries in one place.

Not every website has syndicate their content. Only some website that offer this kind of RSS news feed. XOOPS also has these features for offer other site to feed their news.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <rss version="2.0">
- <channel>
  <title>Network of Aquaculture Centres in Asia-Pacific</title>
  <link>http://www.enaca.org/</link>
  <description />
  <lastBuildDate>Thu, 1 Apr 2004 17:44:56 ICT</lastBuildDate>
  <docs>http://backend.userland.com/rss/</docs>
  <generator>XOOPS 2.0.5.2</generator>
  <category>News</category>
  <managingEditor>ict@enaca.org</managingEditor>
  <webMaster>ict@enaca.org</webMaster>
  <language>en</language>
- <image>
  <title>Network of Aquaculture Centres in Asia-Pacific</title>
  <url>http://www.enaca.org/images/logo.gif</url>
  <link>http://www.enaca.org/</link>
```

Fig. 2 Example of RSS News feed

13. Conclusion

We have presented the use of CMS software in aquaculture dissemination information. Benefit that we gain in use of CMS is low cost investment. End user can rapidly create content website without required much knowledge on HTML format. Exchange of the content is feasible using RSS news feed.

14. Reference

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