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Need for Knowledge Management in Fisheries Sector: An Area of Cooperation Among SAARC Countries

12 Chapter

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ABSTRACT

Article discusses the need for holistic view and initiatives for implementation of KM activities in fisheries sector. Recommends cooperation among the SAARC member states for developing the sector and to benefit mutually. Stresses the need for exchange of scientific and technological information of the sector for the success of the Regional projects of Food Security initiatives, Bio-Security Initiatives including Containment of Trans-boundary Fish Diseases. Regional strategy of KM in fisheries sector based on cooperation, sharing and exchange of knowledge shall help driving overall national economic growth and well being of the people. Opines that LIS is highly relevant for making KM a success. Ramifications of the relationship between KM and LIS have to be exploited for evolving KM culture in the sector. Theoretical basis and practical skills of LIS profession entail core position in Knowledge-based environment and KM Systems. Emphasize need for Fisheries Information System and Fisheries KM System involving professional understanding of knowledge and information as well as learning and training by KM managers to reinvent the professional concepts to demonstrate strategic and tactical value of the professional skills. Suggest a portal on the lines of Pacific Islands Marine Resources Information System (PIMRIS) for information and knowledge resource sharing in fisheries sector by SAARC member countries.

KEY WORDS: Knowledge Management; Strategic Learning; Knowledge worker; Knowledge organization; Knowledge Network; Fisheries; Aquatic and Fisheries Information System

1.Introduction

Fisheries is an area where regional and global cooperation quicken the phase of development and bring together countries that have common resources and identical management problems. South Asian Association for Regional Cooperation (SAARC) established in 1985, [Patra, Swapan Kumar and Chand, Prakash, 2009] now with eight member countries of South Asia, namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka have a long history of cooperation in agriculture education and research. Fisheries is a major sub set of agriculture in many of the SAARC member countries.

The planning for development of fisheries sector requires a considerable amount of information as to the demographic and socio-cultural characteristics of fishing communities, their occupational structure, income levels and other indicators of well being, the size of resource base, productivity, cost structure and profitability of existing technologies, the efficiency of marketing system, social and institutional constraints etc. Because of the complexity of the problem, without such information and a thorough understanding of the constraints, the development efforts may get frustrated. [Rao, D.V.S. and Raju, V.T., 1998]. Information is an ingredient and a problem-solving tool and is a key factor for transformation of the society. It is a fundamental principle of any management decision and action that it needs to be based on the best available information. Fisheries is no exception to this principle. However, the complexity and high degrees of uncertainty that are so common in fisheries management frequently make it very difficult to implement by using best available information in a suitable manner.

Fisheries is an Industry. In today's world where commercial interests precedes environmental and societal interest, cooperative efforts through knowledge based activism is essential especially in South Asian region considering the developing economy, richness of natural resources, occupation of the people and sustainable growth of the sector. Thus, the need for detailed knowledge about fishery sector in India, in the region and the world has assumed added importance.

Modern society is termed 'Knowledge Society'. Knowledge Society refers to any society where knowledge is the primary production resource instead of capital and labor. Origin of knowledge in all spheres of activity and its exponential growth are attributed to the factors such as globalization; rapidly changing technologies that necessitates acquiring and applying new knowledge; growing role of research in development, use of science and technology for solving social, business and environmental problems etc. In these circumstances, managing knowledge has become the most important task for modern society. Knowledge Management (KM) deals with organizational processes and strategies to consciously manage this critical asset. Though it is now realized that KM is important for the long-term survival and success of organizations, and for building sustainable competitive advantages, organizations and nations face

challenges associated with the complexities that hinder knowledge flow. Knowledge environments are clearly information centered, and provide unique opportunity for information professionals to become core part of their organization [Rajyalaksmi, D., 2003]. The KM environment needs excellent Information Management for its implementation and success.

2. Knowledge Management (KM)

Knowledge Management is a management practice that uses an organization's intellectual capital to enable the enterprise to achieve its organizational mission. Intellectual capital is the knowledge that comes from the developed and accumulated experience, service, and products of the organization's employees, at all employment levels. When an organization establishes and commits to KM as its management methodology, the organization can be said to be using its collective intellect to accomplish its strategic objectives. [Clair, G., 2003].

The most remarkable difference of knowledge from other resources is that the new knowledge provides platform for expansion of knowledge. There is a growing need to manage knowledge as it becomes more valuable to harness the current technology and all possible sources for full benefit. [Venkatasubramanian, K., 2003]. Education, research and development are the corner stone of knowledge society. The role of libraries and information centers are indispensible and crucial in the knowledge society. Accordingly, libraries have re-defined and re-engineered their roles in tune with the changing contours of the society.

3. Information and Knowledge

Information services are one of the key factors of knowledge industry. The "information age" referred commonly has become, in effect, the "knowledge age". In the knowledge age, knowledge workers are not interested in information for its own sake but in knowledge itself. So, they take information, codify it, analyze it, interpret it, and use it to learn something new and share what they have learned with others who can use it. The route to that knowledge not only utilizes KM as a management practice, it also incorporates organizational learning. Learning, training and development are all part of a knowledge-transfer application in the organizational environment that permits knowledge workers to transform information into knowledge and to use it for organizational purposes.

Knowledge can be (a) explicit, that is, captured in a format which can be manually or electronically documented and/or manipulated as required and (b) tacit, that is, not captured or recorded, but available through the social interactions of those who have it and those who need to access it, or both. Successful KM initiatives try to manage both explicit and tacit knowledge by recording or codifying it or transferring it through knowledge communities. Library and Information Science (LIS), deals with management of explicit knowledge. Studies in LIS with a new direction can suggest managing tacit knowledge because the major procedures in LIS are to facilitate information access and retrieval in response to perceived need. Organization of knowledge, the fundamental function of LIS, is the organization of documented messages in which knowledge or information is represented. The organization of

knowledge within the mind, or brain, is a primary focus of cognitive psychology and cognitive science [Gurnsey, J., 1996].

Role of LIS in KM is increasingly being identified. KM initiatives are most likely to be introduced and succeeded in the libraries that function as learning centre, have strategic goals, a knowledge sharing culture, the versatility to accept new challenges and try different approaches, and the ability to harness the power of IT. [Gandhi, Smithi, 2004]. Effective bibliometric methods, SDI profiles, heuristics of a Reference Librarian in answering reference queries, capturing knowledge etc are to be studied further. Knowledge acquired by librarians about best sources or best practices through experience comprise tacit knowledge of that library. The library work is a component of knowledge innovation and library professionals are knowledge workers. KM activities in libraries are to promote relationship in the libraries, between libraries and users, to strengthen knowledge networking and to quicken knowledge flow.

4. Knowledge Innovation

The objective of knowledge management in libraries is to promote knowledge innovation. As repositories of knowledge and information for distribution and sharing, libraries represent an indispensable link in the scientific system chain. The library work is a component of knowledge innovation and libraries take part in scientific research process directly. Libraries act as bridges for turning the results of knowledge innovation into productive forces by paying attention to diffusion and conversion of knowledge. Cao says that the libraries will increasingly be reposed with development and application of information resources, construction of virtual libraries and portals, protection of intellectual property rights in the new century and shall act as the base for knowledge innovation. [Cao, Yi., 1999]

5. Components of KM

Components of KM have been discussed variously as themes, tools etc by different authors. The components counted in the study are:-

1. Knowledge	Acquisition, Creation, R&D.
2. Management	Organization of knowledge, Data Warehousing, Information Management Systems and Services, Reference Services
3. People	Technology experts, Knowledge professionals, Knowledge managers
4. Process	Creation, capturing, storing, sharing, application
5 Technology(ICT)	Hardware, Communication tools/software. Packages such as Portal, Digital Library, Digital Archive, Digital Repository
6. Culture	Environment, Meeting and sharing among staff, within organization, Policies, Groups

6. Tools for Success of KM

ICT has an important role for the success of KM. ICT infrastructure for communication and sharing of information is robust in Indian R&D institutions. Now, the web portals

have become the most powerful tool for the delivery of customized data to the end-users. It is one of the tool for adding value and it offers a single point of entry through a common interface with information, resources and business processes [Natarajan, M., 2008] Portal is the interface, the place where information exchange and knowledge transfer takes place, but it is only one component of successful KM. [Cloete and Snyman, 2003]. Support of portals for KM process is well identified as the portals synchronize knowledge and applications into the organisation's intellectual capital. Digital Libraries, Digital Archives etc are also essential for successful KM as knowledge and access to knowledge became easier and widespread when digital libraries came into being.

Encouragement by organization for capturing, generating and converting tacit knowledge into explicit knowledge by electronic, print, audio-visual means, evolving open corporate culture that enables KM constitutes KM culture.

7. KM Systems

Knowledge and expertise existing in organizations generate more value when they are rapidly applied, emphasizing mainly the role of transfer. It is of limited value if it is not shared. An information system facilitates generation, integration, sharing and dissemination of organizational knowledge. According to Wensley [Wensley, A. 2000] such systems are referred to as KM Systems and fall into four categories:-

1. Content Management Tools: Tools with abilities to integrate, classify and codify knowledge from various sources.
2. Knowledge Sharing Tools ; Tools that support sharing knowledge between people or other agents
3. Knowledge Search and Retrieval Systems: Systems that enable search and retrieval and have some knowledge discovery abilities.
4. General KM Systems: Systems that propose an overall solution for a company's KM needs.

8. Need of KM in Fisheries Sector

Knowledge and entrepreneurship would become decisive factors in developing a sustainable economy and an equitable society with adequate and affordable food and ecological security for all. However, this is contingent upon radical but sustainable development of the primary sector including fisheries. Fisheries and aquaculture sector has been recognized as the fastest growing food production system during the last three decades.

Fisheries and aquaculture is a specialized field. Speedy and effective exploitation of the knowledge acquired in the sector has to be applied for development of this important sector. However, discovering, using and validating what has already been achieved depends upon the effective dissemination and sharing of information, as well as ensuring its presentation and availability for future generations.

India is major fish producer among SAARC countries with 67% (7583567 mt -2008) of total fish production in the SAARC region. Bangladesh is the second largest fish

producer in the South Asian region. Afghanistan and Bhutan produce a smaller amount of fish compared to other countries in the region. India is the dominant fish exporter in the South Asian region followed by Bangladesh and Pakistan. Sri Lanka is the fish importing country in the region. Maldives recorded the highest per capita fish consumption at an average of 179.8 kg per year. This is the highest per capita consumption in the world. Sri Lanka is the second largest fish consuming country followed by Bangladesh. Fish consumption is very low in Bhutan (0.5 kg), Nepal (1.5 kg) and Pakistan (1.8 kg).[Source: Pal S.K., Fonseka, H.H.D and Paul S.S (ed), 2009]. Geographic and demographic factors are the influential factors for these positions with regard to production, consumption and export/import of fish and fish products.

Sharing of information on aquatic animal health, movement etc is an important area which the member countries can cooperate. Movement of live aquatic animals and their products is needed for aquaculture development in the region. However, it poses serious impacts relating to the global translocation of species to new regions. [Kalaimani, N and Ponniah, A.G., 2007].

Due to revolution in the Information and Communication sector and the tremendous opportunities offered by ICT, Communications have received prominence in SAARC process. The importance of developing infrastructure and adequate communication networks among member states is essential for the process of economic cooperation. Fisheries is an economic activity. Simplification of the procedures for documentation and sharing of information is sine qua non to facilitate sound and effective decision-making, policy formulation, research and development in this vital economic and food sector.

9. Literature Review

Literature review on the topic of KM reveals that there is a plethora of literature published yearly mainly dealing with KM in business environment. KM in the libraries has not been extensively studied. Studies on KM aspects in specialized sectors such as fisheries sector are few. Significant body of literature available, dealing with KM in business environment has been helpful to frame this study focusing on the specific area of fisheries sector.

10. Aims and Objectives of the Study

The article aims to investigate the basic aspects of KM in the Fisheries institution libraries and to suggest the ways in which the libraries could add value to their services by engaging best KM practices in the region.

11. Mode of study

A quick survey has been conducted to trace the tenets of KM in fisheries sector libraries in India through a Questionnaire to the professionals in these libraries. The study also used Interview and Observation to collect data. Head of the libraries were interviewed to get in-depth information about KM practices followed in the library. Data were analyzed with mean and mode while the data gathered through interview and observation were analyzed qualitatively.

12. Results and Discussion

The concept of KM is known to the professionals in the sector. 92 % of respondents have responded positively and 80% support KM activities in the libraries. Importance of knowledge in sustaining the organization is known to the professionals and 76 % of professionals opine that the LIS have an increased role in KM activities in their respective organizations. They understand that acquisition, capture, conversion of tacit knowledge to explicit knowledge is needed for the posterity.

78% of respondents opine that their libraries and institutions have ICT infrastructure that can act as a tool for successful KM. 60% of the respondents could not list any KM activities/products that are being carried out in the library. The major reason pointed out by the respondents is the lack of policy on KM in their institutes. Other impediments are lack of programmes, Finance, awareness of management, awareness of library professionals, guidance and training. (Fig 1)

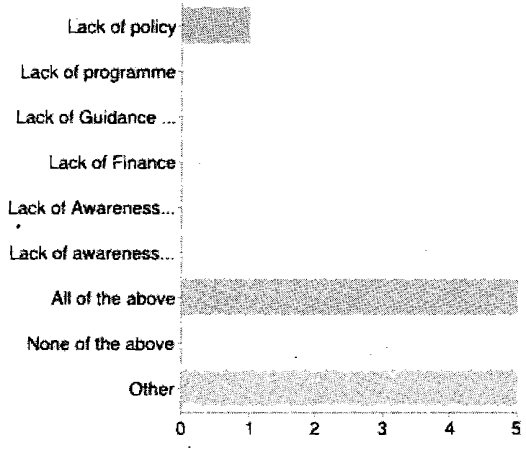

Fig 1: Main reasons for not initiating KM activities in libraries

Information services are part and parcel of library services. However, efficient Reference Service based on tacit knowledge of the Reference Librarian can be considered as a service based on KM concepts. Knowledge of the Reference Librarian about the sources of information, liaison with professionals in the field, communication abilities, expertise in ICT are the determinant factors for efficacy of Reference services provided in an organisation. 92% of the respondents opine that institute/library do not have programs for capturing expert knowledge of the professionals in the organization.

The sectoral institutions are yet to implement KM culture. 76% of the respondents opine that the expertise of LIS professionals is not considered and are not involved in the KM initiatives, if at all practiced. Meetings and gatherings involving all the strata of staff in the organization where knowledge strength of the institution is discussed are rare.

Libraries in the sector have taken up KM initiatives such as Electronic Theses and

Dissertations (ETD), Digital Archives, Repositories that are made operational wit the expertise and resources of the libraries. This trend is very encouraging. Howeve libraries have not taken up creation and maintenance of Portals probably becaus libraries alone could not take it up and needed support from the institutions in th sector. (Fig 2)

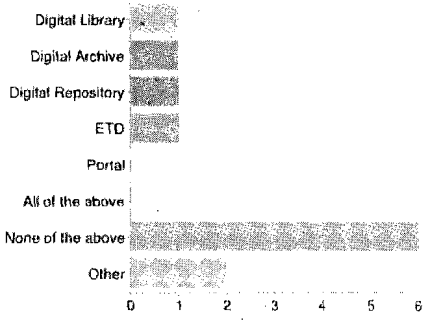

Fig 2 : KM initiatives by the sectoral libraries

Central Marine Fisheries Research Institute (CMFRI) is the major fisheries institute that implemented repository of institutional knowledge of past 50 years. It is initiated by the library and the service is accessible globally on internet. More libraries could initiate such KM activities provided the institutes have knowledge culture that encourages creation, capture, sharing and dissemination of knowledge

13. Findings

National Knowledge Commission, India in its report identifies the role of libraries as extremely important for the foundation of knowledge economy. It also recommended formation of National Knowledge Network to interconnect all the knowledge institutions in various fields to encourage sharing of knowledge and collaborative research [National Knowledge Commission, 2009]. Recommendations of NKC clearly give directions for evolving KM culture in the country. National Knowledge Network formulated and operated by National Informatics Centre (NIC) aims to bring together all the stakeholders from science, technology, higher education, health care, agriculture and governance to a common platform. NKN can further extent it's helping arm in the South Asian region and among SAARC member countries.

Need for a strong and efficient Fisheries Information System that provides for collection, organization and accessing fisheries information has been stressed earlier. [Raman Nair, R., 2007]. Fisheries institutes in India have evolved into resourceful information system themselves by sheer strength of the knowledge resources. However, an institutional network based on cooperative agreements, is absent among fisheries institutions. Networking and sharing of information by utilizing the power of ICT shall pave way for excellent information management and systems that are essential for successful KM environment.

Concerted efforts at the organizations, change in management perceptions about LIS profession and financial support for training and workshops on KM are some of the measures that are required for development of KM culture in the region. National Fisheries Institutions, especially under Indian Council of Agricultural Research (ICAR), have information capacity to evolve KM System of fisheries in the region. This knowledge base has to be packaged for KM components in the sector. Detailed studies and cooperative agreements are to be initiated for KM in the sector and the region.

KM activities in the sector are related to creation of knowledge repositories; improvement of knowledge acquisition; enhancement of the knowledge environment; and management of knowledge as an asset. These themes are yet to be percolated to the management levels in its wider ramifications in the sector. KM components are making its presence felt in the fisheries libraries in the region. However, concerted efforts and involvement in KM activities by the LIS personnel are yet to be noted in the sector.

14. Conclusions

Agriculture continues to be the key constituent in each South Asian economy with regard to employment and contribution to national GDP. Fisheries is being one of the main agrarian activities in SAARC region, formulation of KM strategy based on cooperation, sharing and exchange of knowledge in the sector is to be preferred.

KM initiatives and exchange of scientific and technological information in fisheries sector among SAARC member countries shall benefit further for the Food Security initiatives, Bio-Security Initiatives including Containment of Trans-boundary Fish Diseases in the region.

A portal initiated by the member countries; created and maintained with knowledge base of the national fisheries institutions as first step, shall enable KM in the sector and the region. NKN can provide back-bone network infrastructure and other facilities for the initiative. Directorate of Knowledge Management in Agriculture (DKMA), ICAR can harness information and knowledge base it has created over the years through the national fisheries institutes for content creation in the portal.

Such a portal shall serve as a single point of access for consolidated information resources that can meet information needs of decision makers and stake holders in the sector. Information shared over the portals shall pave way for regional cooperation in the sector. A knowledgeable society can influence activism taking place in the sector to take into consideration issues affecting our environment and consequently quality of life. Such knowledge based activism shall fill the information gap for stake holders alike and channelize efforts for regional cooperation in fisheries sector by SAARC member countries.

The model suggested for Portal is Pacific Islands Marine Resources Information System (PIMRIS). PIMRIS is a formal cooperative network of libraries and information centres within regional organisations and government agencies concerned with the development of fisheries and marine resources in the Pacific region. Its aim is to

improve access to information on marine resources in the region. The portal, the Pacific Islands Marine Portal project is a collaborative project between the Pacific Islands Marine Resources Information System (PIMRIS) and the UNESCO IOC IODE Project Office (Oostende, Belgium) to improve access to Pacific marine information for the Pacific Islands community. [www.pimrisportal.org]. The portal contains news, articles and directories of websites relevant to Pacific fisheries and to the coastal and marine environment of the Pacific. The Members Area of the website provides access to additional resources and services for PIMRIS members including regular announcements of training opportunities, details of funding opportunities, a members' forum and an information support service.

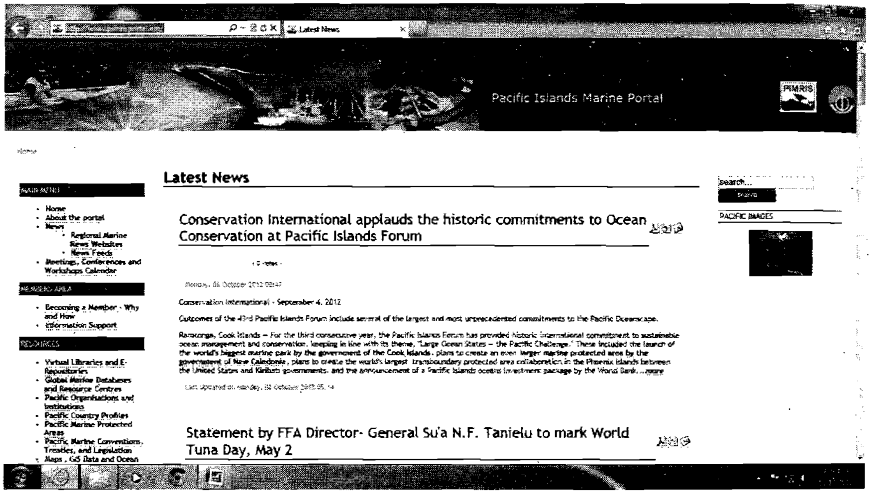

Fig 3 : Home page of PIMRIS

Links in PIMRIS give a comprehensive view as follows:-

- Home
- About the portal
- News
    - o Regional Marine News Websites
    - o News Feeds
- Meetings, Conferences and Workshops Calendar
- Becoming a Member - Why and How
- Information Support
- Virtual Libraries and E-Repositories
- Global Marine Databases and Resource Centres
- Pacific Organisations and Institutions
- Pacific Country Profiles
- Pacific Marine Protected Areas
- Pacific Marine Conventions, Treaties, and Legislation
- Maps , GIS Data and Ocean Observing Systems
- Training and Educational Resources
- Online Journals

- Regional Initiatives and Projects
- Key Contacts

KM in the sector can boost research and development contributing to unprecedented changes in capabilities and benefits to the society. Although there is a recognition that the knowledge society and the knowledge economy have arrived, organizations are still in the early stages of understanding the implications of KM. The visibility of LIS profession and the utilization of their skills seem to be very low in fisheries sector.

KM has considerable relevance with library and information profession. LIS professionals have interest in learning more about KM and in the implementation of KM in the libraries and information environment. Ramifications of the relationship between KM and LIS shall become clear to the professionals when KM culture is evolved and when the library professionals become the core part of KM Systems in fisheries sector. Learning, training and development may also be taken up to reinvent the professional concepts to demonstrate strategic and tactical value of the professional skills.

Reference

1. Cao, Yi. (1993). The reorientation of libraries in the Knowledge Economy *Era, Library Work and Research,* 1999(3), p 24-26.
2. Clair, Guy St. (2003). Knowledge Management. *In* Allen Kent et al (eds), *Encyclopedia of Library and Information Science,* Marcel Dekker, New York, p 1486-1494.
3. Cloete, Marian and Snyman, Retha., (2003), The enterprise portal –Is it knowledge Management? *Aslib Proceedings* 55(4), 2003, p 234-42.
4. Gandhi, Smiti. (2004). Knowledge Management and Reference Services. *The Journal of Academic Librarianship.* 30 (5), September 2004. p 368-381.
5. Gurnsey, J. (1996). Organization of Knowledge In Allen Kent et al (eds), *Encyclopedia of Library and Information Science,* Marcel Dekker Inc, New York, p 1968-1996.
6. Kalaimani, N and Ponniah, A.G. (2007). Significance of International Codes in the Trans-boundary Movement of Species and Quarantine Policy in Indian Fisheries Sector. In Vijayan, K.K, Jayasankar, P. and Vijayagopal, P. (eds) 2007. *Indian Fisheries -A progressive Outlook.* Central Marine Fisheries Research Institute, Kochi, p 72-85.
7. Natarajan, M. (2008). Portal as a tool for Knowledge Management synchronization, In Koganuramath, M.(Chief ed)., *Proceedings of the International Conference on Knowledge for All: Role of libraries and Information centres,* 12-15 Nov 2008, Mumbai. SITA Pub., Mumbai, p 1-920.
8. National Knowledge Commission (2009). Government of India, Recommendations of the National Knowledge Commission, Academic Foundation, New Delhi.
9. Pal S.K., Fonseka, H.H.D. and Paul S.S. (eds), (2009). Statistical Data Book for Agricultural Research and Development in SAARC countries 2008-09, Vol 6, SAARC Agriculture Centre, Dhaka.
10. Patra, Swapan Kumar and Chand, Prakash (2009). Library and Information science research in SAARC and ASEAN countries as reflected through LISA, *Annals of Library and Information studies,* Vol 56, March 2009, pp 41-51.

11. Rajyalakshmi, D.(2003). Information Professional in Knowledge Management Age. In: Ramesh Babu and Gopalakrishnan(eds), *Knowledge Management :Today and Tomorrow.* Ess Ess Publications, New Delhi, p 11-23.
12. Raman Nair, R. (2007). Information Resources and services on aqua sciences and fisheries in India, *Library Herald,* 45(3) September 2007, p225-248.
13. Rao, Darsi Vishnu Sankar and Raju, V.T. (1998). Economics of fisheries technologies, Ambika Book Agency, Jaipur.
14. Venkatasubramanian, K. (2003). Emerging Knowledge Society and Earth Care Campaign, Second Foundation Day lecture, Bhoovigyan Vikas Foundation, New Delhi.
15. Wensley, A., (2000), Tools for knowledge management, BPRC *Conference on Knowledge Management : Concepts and controversies,* 10-11 February, University of Warwick, Coventry.
16. www.pimrisportal.org (Accessed on 16 Oct 2012)

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