

# CeRA – the e-Journal Consortium for National Agricultural Research System

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*Consortium for e-Resources in Agriculture (CeRA) is an e-Consortium of Agricultural Libraries under the Indian Council of Agricultural Research for National Agricultural Research System (NARS) libraries. This article describes the background, main features, advantages and use of e-journals (subscribed by CeRA) by the users of NARS institutes/universities. Besides covering the use of e-journals, the article also examines the utilization and satisfaction levels of users accessing e-journals. Lastly, some cost avoidance analysis and research productivity analysis are also highlighted.*

**Keywords:** Cost avoidance, CeRA, e-journals, library consortia.

CeRA, the Consortium for e-Resources in Agriculture, has been established for facilitating accessibility of select scientific journals related to agriculture and allied fields, to all researchers in the National Agricultural Research System (NARS). The foundation for this initiative was made by providing internet connectivity to most of the Indian Council of Agricultural Research (ICAR) institutes under the National Agricultural Technology Programme (NATP) over a decade ago. This was done with the ultimate objective of providing access to information, specially access to on-line journals, which is crucial for excellence in research.

It has been observed that over the years, subscriptions to journals by libraries of ICAR institutes/State Agricultural Universities (SAUs) have been on the decline mainly because of financial crunch. Additionally, increase in the cost of international journals has forced many librarians to reduce their number. One of the prerequisites to remain in the forefront of international knowledge generation is the availability of journals. Since no institute/SAU library can subscribe to all journals, an initiative was put in motion with the creation of CeRA in 2008 under the National Agriculture Innovation Project (NAIP) for providing on-line accessibility of research articles from select publishers.

## Importance of e-publishing for library consortia

The advent of e-publishing has brought a revolution in journal publication, subscription, access and delivery

mechanisms. The e-published resources offer tremendous possibilities and advantages over the print media, which include ease of use, shareable nature, availability on the internet, hyperlink to related texts and links to multimedia, etc. A consortium can be defined as a strategic alliance of institutes having common interests. The main aim of a consortium is to achieve what members of the group can achieve individually at a relatively low cost. The library consortium can be at local, state, national or international levels for making available resources and services for the benefits of its members.

Currently, publishers like Springer, Wiley-Blackwell and Elsevier are providing their articles on-line before their print versions are made available. With respect to CeRA, various features like Simple Search, Advance Search, etc. are provided through the consortia. e-Publishing has increased the interactivity and customization for consortia users by providing alerting services like 'My Journals'.

e-Publishing provides benefits to consortia users in many ways. Some of them are:

- It is space- and time-invariant.
- Helps save time for users.
- Provides value addition such as search ability, alerting services, links from one article to another, forward links (citing articles), etc.
- Accelerates publications.
- Articles cannot be mutilated, stolen or lost.

e-Publishing also provides benefits to librarians:

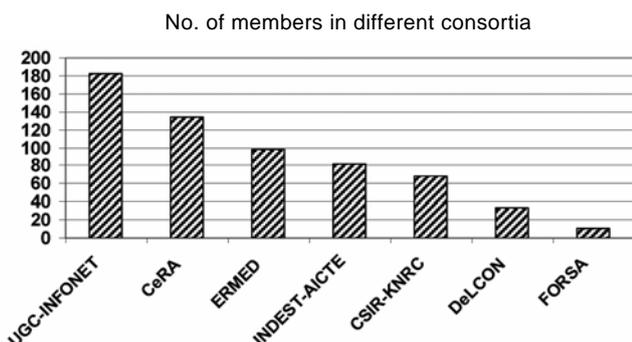
- Superior resources delivery.
- Reduced shelving, binding, maintenance, clamming, etc.
- Cost saving.

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**Table 1.** Major ongoing library consortia

Name	Members	URL	Resources	Publishers
UGC INFONET 2.0 (INFLIBNET) <sup>2,3</sup>	182	<a href="http://www.inflibnet.ac.in/infonet/">http://www.inflibnet.ac.in/infonet/</a>	5500	25
CeRA	134	<a href="http://www.cera.jccc.in">http://www.cera.jccc.in</a>	3000	7
ERMED <sup>4</sup>	98	<a href="http://www.nmlrmed.in">http://www.nmlrmed.in</a>	1812	10
INDEST-AICTE <sup>5</sup>	82	<a href="http://paniit.iitd.ac.in/indest/">http://paniit.iitd.ac.in/indest/</a>	6500	17
NKRC (CSIR-DST) <sup>6</sup>	68	<a href="http://ejournal.niscair.res.in/index.php">http://ejournal.niscair.res.in/index.php</a>	4500	23
DeLCON DBT e-Library Consortium <sup>7</sup>	33	<a href="http://delcon.gov.in">http://delcon.gov.in</a>	917	19
FORSA <sup>8</sup>	11	<a href="http://www.ncra.tifr.res.in/library/forsaweb/index.htm">http://www.ncra.tifr.res.in/library/forsaweb/index.htm</a>	25	10



**Figure 1.** Member strength of the major emerging consortia in India.

**Table 2.** Electronic resources available through the CeRA consortium

Publisher	No. of journals
Annual Review	22
CSIRO	8
Elsevier	358
Indian journals	131
Springer	70
Taylor & Francis	1079
Total	1668

- Improved services.
- Public relation opportunities.
- Greater visibility of products.

e-Publishing and consortium approach not only saves money, but also make articles lively by providing several features like animation, virtual reality and interactive mathematical charts.

### Library consortia in Indian scenario

In India, the Forum for Research Sharing in Astronomy and Astrophysics (FORSA), one of the oldest library consortia in the country for physics was established in 1982. The history of library consortia for on-line subscription and on-line access in the country was initiated about two decades ago, with the establishment of the Information

and Library Network (INFLIBNET) Centre<sup>1</sup>. This is a national body established by the University Grants Commission (UGC) of India in 1991. Thereafter, various subject-oriented consortia were established to improve the quality and status of research and development, namely CSIR-DST e-journals consortia for scientific information for CSIR and DST laboratories (also called as National Knowledge Resource Consortium), Indian National Digital Library in Engineering, Science and Technology (INDEST) for engineering and technology-related institutions, Electronic Resources in Medicine (ERMED) Consortium for Medical colleges/institutions, and DBT e-Library Consortium (DeLCON), etc. which are doing well in their respective subject areas. CeRA is among the latest consortium catering to agricultural research and education. Some of the popular Indian initiatives for sharing library resources (especially online journals) are summarized in Table 1.

Among the academic consortia, UGC-Infonet is the largest, with plans to reach out to more than 180 universities and colleges. CeRA is the second largest consortium, next to the UGC-Infonet (Figure 1).

### CeRA e-journal consortium

CeRA is an ambitious programme initiated by ICAR in a sub-project of NAIP, funded by World Bank. It covers about 3000 scholarly journals (comprising consortium-subscribed, Library-subscribed and open access journals) from seven major publishers and catering to 134 institutions under NARS. The number of e-journals and name of the publishers are listed in Table 2.

Since ICAR has network connectivity across institutions and SAUs, select journals have been made available over the network for use of the scientific community. The network of institutions having on-line accessibility of journals in CeRA is large and covers all institutes under NARS (Figure 2).

### Organizational structure of CeRA

Activities in CeRA are governed by Steering, Monitoring and Negotiation, and Working Committees and well sup-

ported by the Project Implementation Unit, NAIP. The organizational structure of CeRA is shown in Figure 3. The CeRA headquarters acts as an interface between all researchers in member institutes towards implementation of objectives of the consortium. Briefly, CeRA aims to develop the existing R&D information resource base of ICAR institutes/universities, etc. comparable to leading institutes/organizations in the world, to subscribe e-journals and create e-access culture among scientists/teachers under the ICAR institutes/agricultural universities, and to study the impact of the consortium on the level of research publications measured through *Science Citation Index (SCI)* and NAAS Ratings. CeRA members have access to on-line journals through IP authentication, which provides a fool-proof system of security and also avoids memorizing user ID, password, publishers' URLs, etc.

### Main features of CeRA

- Document delivery request (DDR) service has been developed at all of the CeRA member institutes to enable all consortium partners who do not have the print version of particular scientific articles. The DDR system includes library subscribed journals which are not subscribed by CeRA.

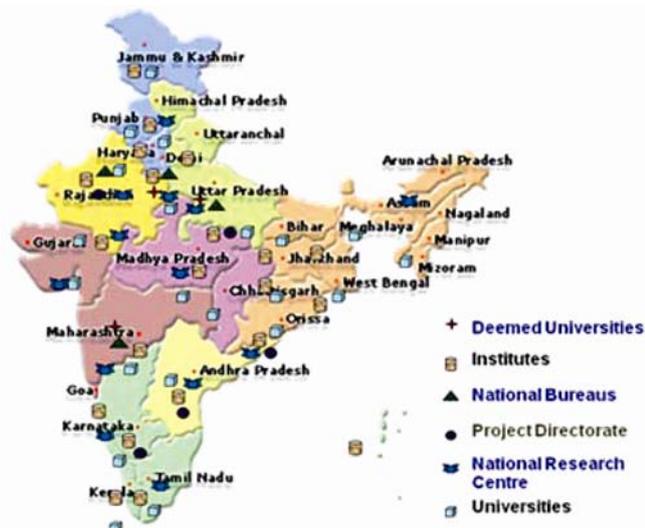


Figure 2. Map showing CeRA member institutes in NARS.

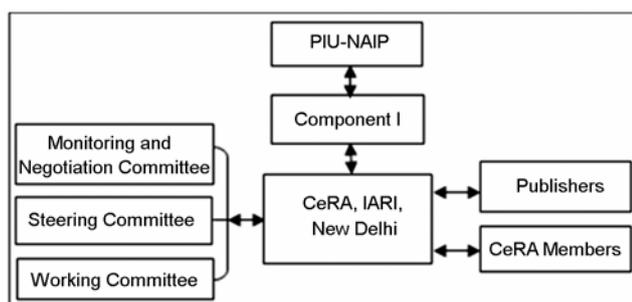


Figure 3. Organizational structure of CeRA.

- Thomson *Web of Science* for *SCI* has been made available to the lead institute (IARI).
- Training-cum-workshop awareness programmes for the CeRA users and librarians are also conducted on regular basis.

### Impact of CeRA consortium

The most important factor for a successful consortium is its usage and impact on R&D activities in the system and CeRA is no exception. During the past three and a half years, activities in CeRA have been updated and monitored on the basis of feedback received from its members and experts. The impact assessment (IA) of CeRA has been measured through the following:

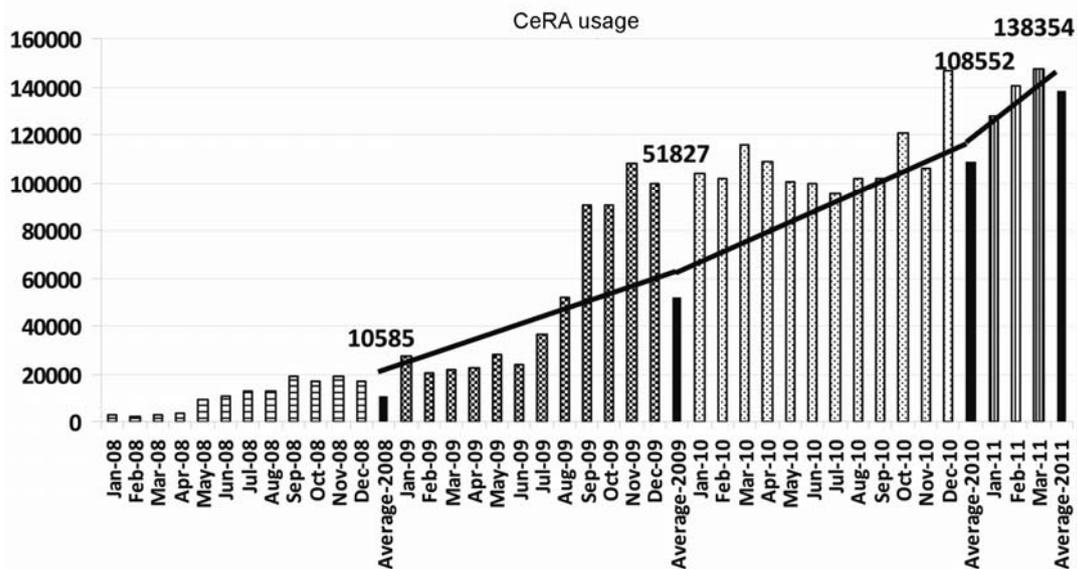
- Evaluating pattern of the number of downloads of research articles.
- Evaluating the progress of the DDR service.
- Evaluating the quality of publications by researchers in NARS.
- Evaluating the usage and recovery of cost incurred on the subscription of e-journals.

### Evaluation of usage data

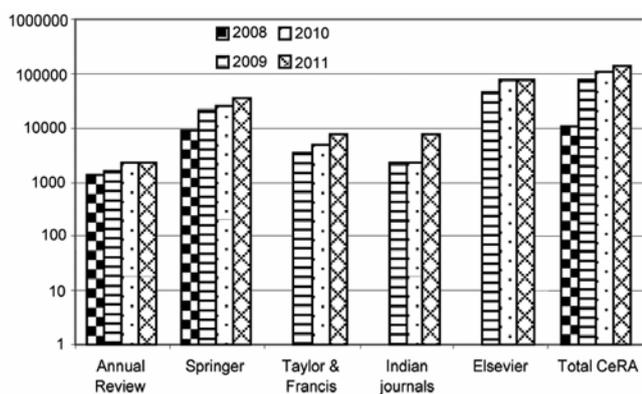
Data on the download of full-text articles reflect the awareness of CeRA among researchers in NARS and provide valuable information on their usage of journals. It can be used to improve effectiveness of the system and to identify areas of importance. The quarterly usage of full-text downloads in CeRA by member institutes for the period from January 2008 to March 2011 indicates a substantial increase (Figure 4). This increasing pattern shows the interest and usefulness of this e-journals consortium for the end-user. Figure 4 also reveals that during the first year, the usage of CeRA was low but as more workshops were conducted, the usage increased exponentially from July 2009.

Other than the whole consortium, the download graph for the individual publishers is also shown in Figures 5 and 6. Figure 5 shows the average number of downloads of articles by all CeRA members per month from different publishers. Figure 6 shows that more than half (66%) of the downloaded articles are from Elsevier, whereas for the rest of the (34%) is from the other four publishers. In the CeRA consortium articles were downloaded from two major publishers, Elsevier and Springer.

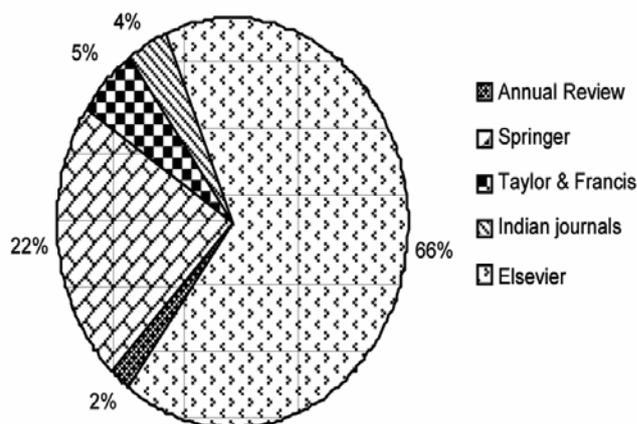
The member institutes of CeRA are divided into five categories, namely, Deemed Universities (DUs), ICAR Headquarters (ICAR-HQs), National Bureaus (NBs), National Research Centres (NRCs), Project Directorates (PDs) and SAUs, according to their similarity of objectives and works. A comparison of download data among



**Figure 4.** Usage of CeRA (measured through the download of full-text articles) by member institutes over the different calendar years (from January 2008 to March 2011).



**Figure 5.** Number of downloads from different publishers over different years.

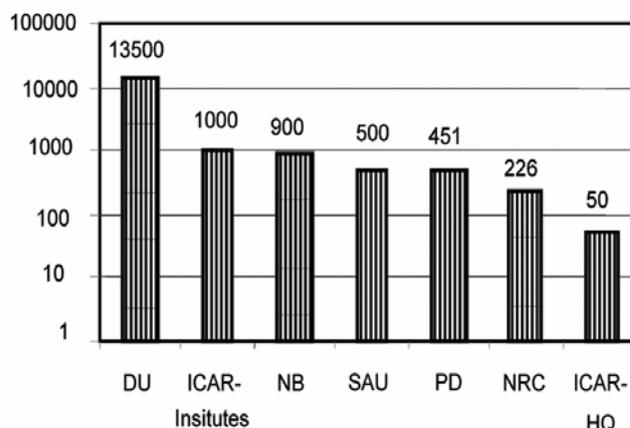


**Figure 6.** Usage (%) of different publishers by CeRA.

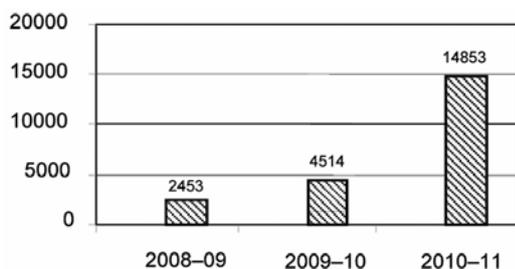
these categories reveals that CeRA usage among the DUs has been more than the other categories (Figure 7).

*Evaluating the DDR service*

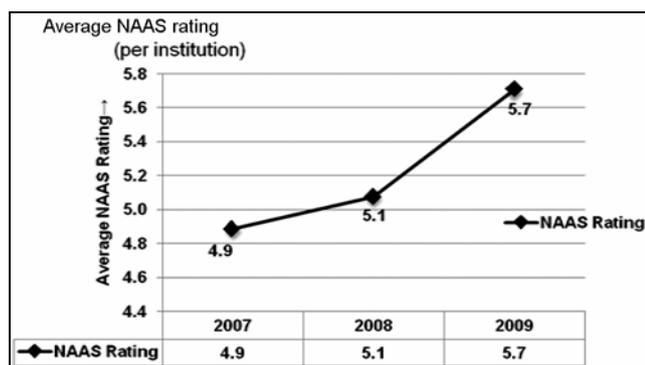
To fulfil the information needs of the end-user, the DDR service has been initiated by CeRA in collaboration with about 134 libraries of member institutes to fulfil inter-library lending (ILL) request from users. The DDR service is also known as the ILL service. ILL libraries together subscribe to about 1700 journals that are not available through CeRA. Any user from CeRA member institution can request for the reprint of an article from the journal, not subscribed by another CeRA member and get the same under Document Delivery Request (DDR) service.



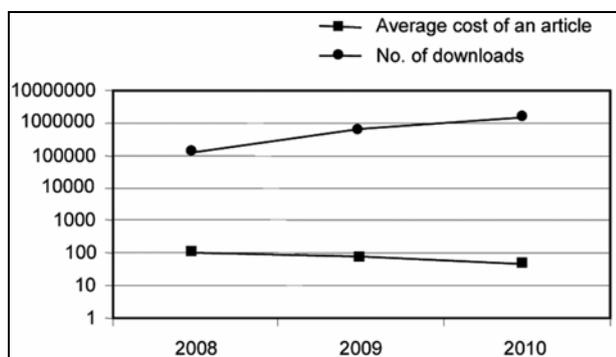
**Figure 7.** Category-wise classification of average no. of downloads per month. PD, Project Directorates.



**Figure 8.** Document delivery request service status of the whole consortium in different years.



**Figure 9.** Year versus publications from member institutes in NARS before (2007) and after (2008 and 2009) the establishment of CeRA.



**Figure 10.** Average cost versus no. of downloads.

The progress of the DDR service in the CeRA consortium so far is presented in Figure 8.

#### *Evaluating the quality of publications by end-users*

The quality of publications in an institute under NARS is measured using the NAAS ID (which is the rating of journals in agricultural sciences, developed by leading experts and Fellows of NAAS and is available in the NAAS website (<http://www.naasindia.org/documents/jrnlist.pdf>).

Here, the number of publications and average NAAS rating are calculated for 43 member institutes that are availing CeRA facilities. It has been observed that there is an increase in quality of publications before (2007) and after (2008 and 2009) establishment of CeRA, as shown in Figure 9.

#### *Evaluating the usage and cost-saving incurred on e-journals subscription*

The usage and cost-saving on e-journals subscribed through the consortium could be evaluated through the usage of e-journals. Accordingly, the average cost of an article was calculated for the whole consortium by dividing the total subscription cost by the total downloads for the years 2008, 2009 and 2010 separately. It is observed that the average cost of an article decreases with time due to better usage of CeRA (Figure 10).

#### **Concluding remarks**

CeRA is an e-journal consortium facilitating 24 × 7 online access of select agricultural journals to all researchers in NARS through IP authentication. Starting with the concept of a consortium, we have discussed the important consortia in the country and some of their salient features. Specific details of CeRA have been presented, especially the quantity and quality of research publications from some of the institutes under NARS, pre- and post-establishment of CeRA. The increase in quantity and quality of research papers is not necessarily due to CeRA alone and other factors could have contributed to it. This is because of the fact that all publishers/journals in agricultural sciences are not available in the CeRA platform. Nevertheless, CeRA plays a key role in the research and developmental activities in NARS.

1. Chakravarty, R. and Singh, S., e-Resources for Indian universities: new initiatives. *SRELS J. Inf. Manage.*, 2005, **42**, 57–73.
2. <http://ugcinfonet.jccc.in/about/about.asp>
3. <http://www.inflibnet.ac.in/publication/annualreport/AR-2009-2010.pdf>
4. <http://www.nmlermed.in>
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7. <http://delcon.gov.in>
8. <http://www.ncra.tifr.res.in/library/forsaweb/index.htm>

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