Report

On

Review of e-Repositories

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Introduction:

FMES is probably the only organization in India which has been working on bioethics in a concerted way. Over the last two decades FMES has developed extensive scholarship in this particular field to inform policies, programs and laws and make them people-oriented. It has also developed and sustained a network of committed healthcare professionals, social scientists, ethicists and critical thinkers who have been working in the field of bioethics locally and globally.

FMES also serves as a virtual think-tank which addresses issues in health and allied themes which impact people's lives. However, in order to effectively address these issues, it is essential to fill a highly visible and major gap of knowledge, i.e. the non-availability of robust resources in bioethics focused on India. Such resources are available in other countries both developed and developing but not in India. This is hugely problematic because there is a dire and growing need for India-specific material for training and educational purposes. In fact, the absence of such material is hindering the growth of bioethics training activities in India.

The purpose of this eRepository report is to review the existing repository models used in bioethics and other disciplines to get deeper insights into the content, operational approaches, digital platform designs and cost efficiency measures used. This report has been published under FMES's initiative to create a systematically organised repository of material on medical, healthcare ethics and bioethics in the form of books, guidelines, manuals, case studies as well as papers from other journals as part of the ongoing effort for awareness and consciousness building. This is especially pertinent because in the coming years, FMES sees itself taking on the role of building and hosting an e-knowledge hub and an e-dissemination house for national and international material and resources related to bioethics, in a comprehensive manner.

Method:

The FMES team used the 'Google' search engine and searched the online available curricula using combination of keywords such as e-repository, repository, India, bioethics, ethics, etc. Apart from utilizing web search, we also considered the institutes who have their own e-repositories. We visited those websites to explore the basic information, content, operational approaches, digital platform design and cost efficiency measures. In overall we did analyze 7 e-repositories.

1) Bioethics Syllabus Exchange Repository:

url: https://repository.library.georgetown.edu/handle/10822/556197

This is the repository of syllabi of bioethics courses. As mentioned on the website, it is meant "to promote the study of bioethics." "The collection consists of over 600 syllabi in 3 languages from 12 countries." "The collection contains syllabi of courses from high school till graduate education." "The Library continues to add bioethics syllabi to the repository on a rolling basis." The portal accepts syllabi from current or former course offerings using the form at the bottom of their webpage. The uploaded syllabus is then reviewed by library staff and thereafter the appropriate syllabi are shared with the public. The syllabi are in pdf format and openly accessible.

At the right-hand side top banner, users can start search of the syllabi by keywords. Just below the search box, one can discover browse items by Creators, titles and by creation date. It has a option to search the items in DigitalGeorgetown which is a collection of all the digital resources of University of Georgetown. The members of the digital library can access these resources using credentials provided by the university.
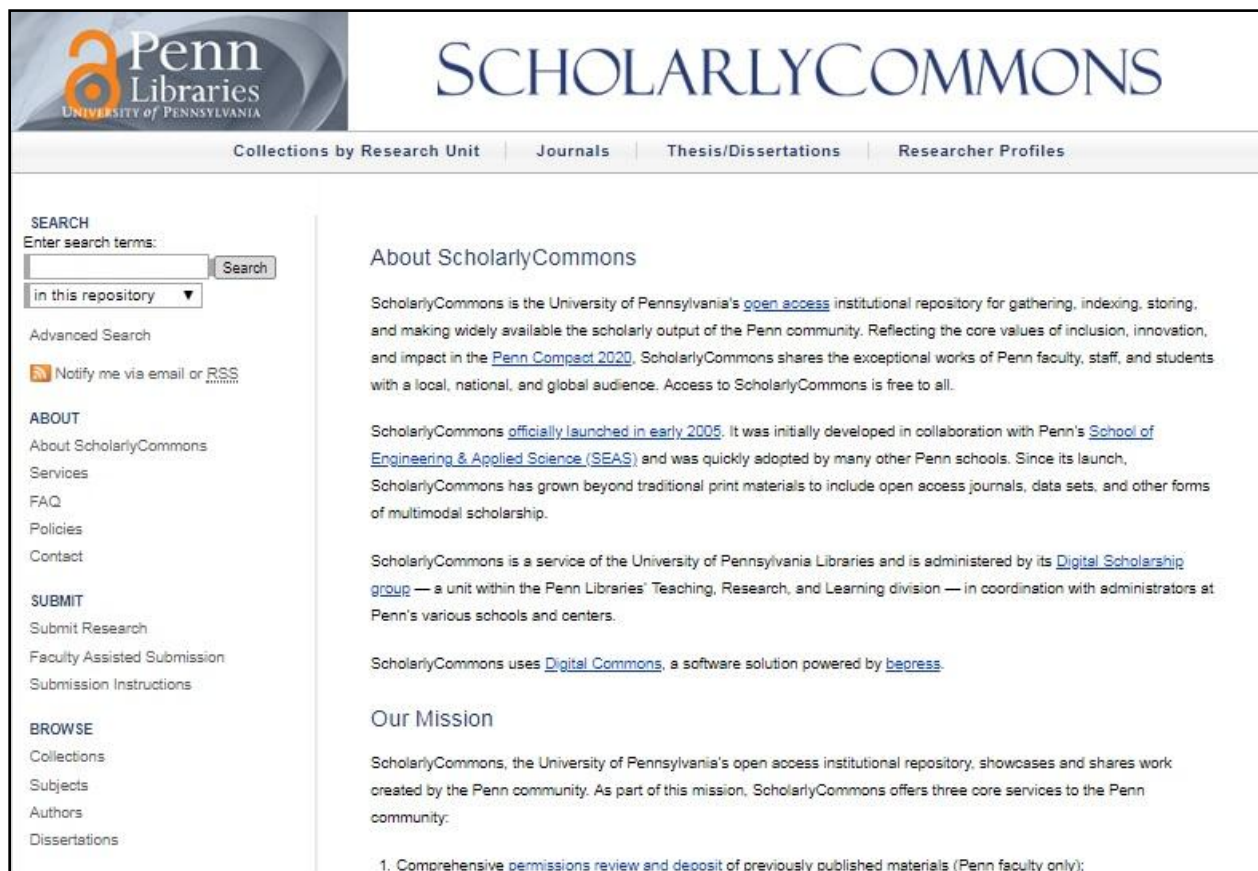
The collection of syllabi is open access and users can specifically search into the collection of syllabi by creators, titles, creation dates, course type/level (high school, undergraduate, undergraduate nursing, graduate, graduate medical education, continuing education, continuing medical education) and subjects sub-classified in alphabetical order e.g. abortion, adoption etc. The most recent submissions are always

visible on home page. It also has a customized search option. The school level syllabi have mentioned only about different themes in bioethics while higher education syllabi have mentioned essential readings under each subthemes of bioethics. The syllabi contain only detail references of the journal article or book. It does not specify if the article is freely accessible or paid. The downloadable/accessible link to the article also has not been given.

2) ScholarlyCommons, University of Pennsylvania

   url: https://repository.upenn.edu/about.html

"ScholarlyCommons is the University of Pennsylvania's open access institutional repository." It uses Digital Commons, software powered by Bepress. "It shares the collection of unique, library created material, distinctive work of Penn faculty, staff and students, Research articles, datasets etc. with global audience." It has 36,792 papers which have been downloaded by 15 million research scholars. The kinds of resources include papers (papers, reports, policy brief, books/ebooks, instructional materials, working papers), videos & audios (instructional video, MOOCs, interviews, audio), datasets, publications (journals, magazines, newsletters), posters, dissertations, theses, Conference Presentations & Agendas, Symposia, Lecture series, research conference.

Students/users need to send their CV and list of publication to be uploaded on the e-repository. The ScholarlyCommons personnel then assists the students/users to determine copyright/permission for every work, contact publisher and post permitted material on ScholarlyCommons. All the resources in ScholarlyCommons are indexed in the search engines like Google and Google Scholar. So the resources listed here are more easily discoverable online and appear high in search results.

On the left-hand side of the webpage, customized search option is located. Below the search option, the web page has tabs such as About (About SC, Services, FAQ, Policies)**,** Submit (submit research, faculty assisted submission, submission instructions)**,** browse (Collections, Subjects, Authors, Dissertations)**,** authors, copyright and data management guides. On the top of the webpage there are options such as collections by research unit, journals, thesis/dissertation and researcher's profile. The e-repository also offers robust live usage statistics with factors such as most popular, total downloads and geolocation under the tab 'Impact'.

All of the content on this e-repository is freely available and openly accessible to the researchers around the world. In order to do so, they assist authors in finding ways to share their work legally on other platforms. They are also trying to find out alternatives to Bepress/Elsevier under the program called Beprexit and if succeeded it will help in making scholarly work available at free of cost.

3) WHO's Institutional Repository for Information Sharing (IRIS):
url: http://apps.who.int/iris/

The Institutional Repository for Information Sharing (IRIS) is the digital library of WHO's published material and technical information in full text produced since 1948. WHO Library in Geneva has released new features for IRIS, the extensive public health DSpace repository, including statistics and automated recommendations. With over 2,00,000 archived items, IRIS offers content from WHO governing bodies, publications, technical documents, guidelines and journal articles. Over the past six months, the repository has served over 19 million downloads. The content is freely accessible and searchable in the six official languages (Arabic, Chinese, English, French, Russian & Spanish).

IRIS offers the user search term and result recommendations, while the user is actively searching. The search engine does not only suggest additional keywords but also highlights actual titles, authors, subjects and publishers, matching the search terms entered by the user so far. When clicked, a preview pane immediately reveals more information about the recommended resource or keyword, enabling fast and efficient content discovery.

For accuracy of the results, the search feature has been enhanced in IRIS to provide you with the most relevant results to you search queries. Automated recommendations are available while users are actively typing the keywords in the search box. Advanced search filters are available to refine user's search. Using dropdown menu, users can choose filters to add to their search criteria. It is possible to apply several filters at the same time. For new search, one needs to remove all the filters and start afresh. For the annual reports collections, the more recent ones appear first with the recency boosting. Users can also search within a particular community or collection only. For example, search only in the Headquarters Publication Collection. To search for exact phrases, users can use quotes "keyword" and also can sort by date to see results in chronological order.
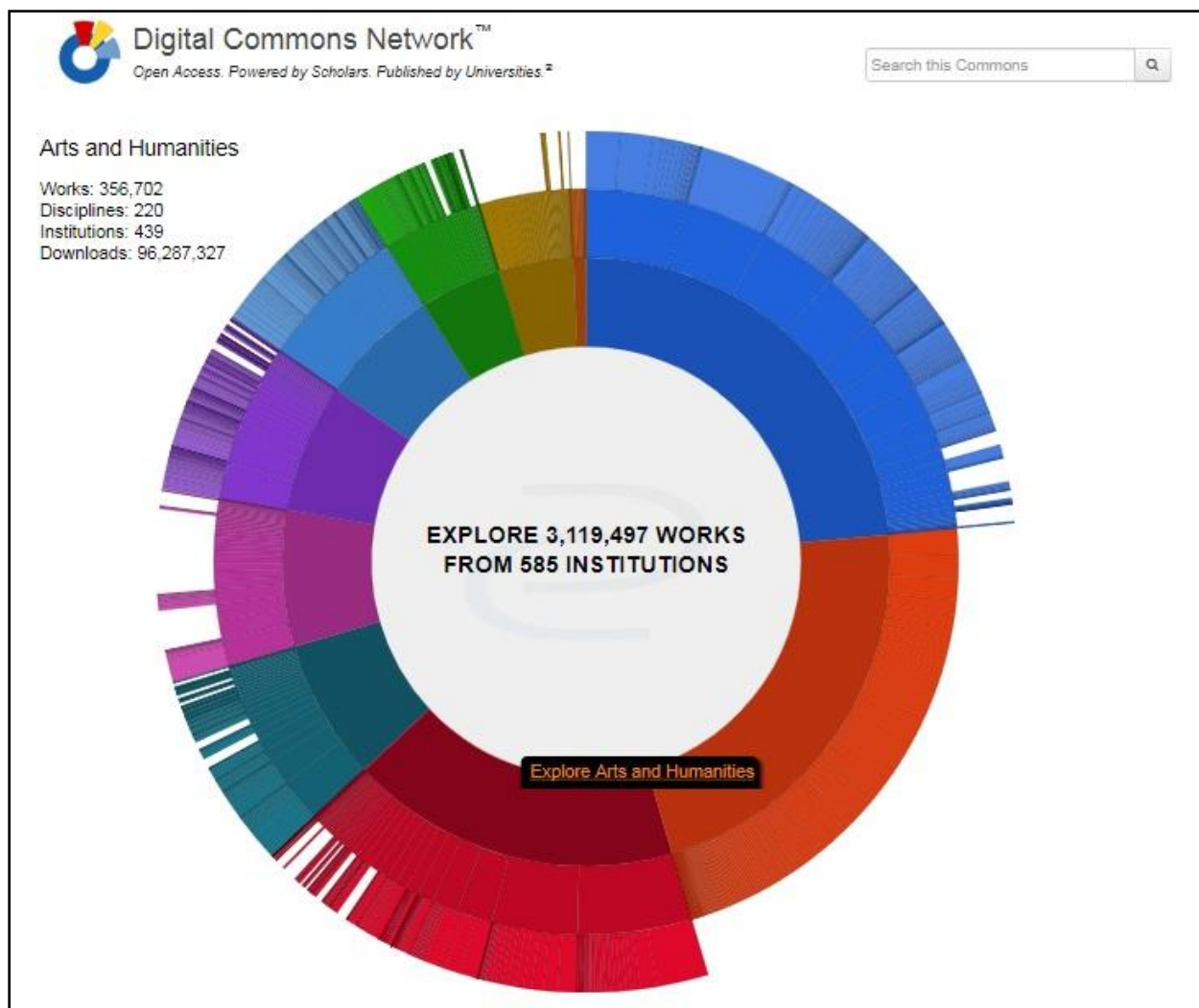
IRIS new interface design is similar to WHO website. At the top banner, one can start their search by keywords in the IRIS search box. In the left menu users can discover the communities and collections and browse items by issue date, subject or author. In the left-hand side menu, users can access IRIS statistics and check out the most popular items and statistics by country. At the item level, one can find the detailed description with citation, icons of the license, link to statistics, item permanent link, access the full text of the publication and many more.

IRIS also offers robust usage statistics with most popular, total downloads and geo-location. From the left-hand side navigation menu, there are two main points of entry: most popular and by country. The 'most popular' option offers a list of the top downloaded publications. Users can use the dropdown menus to select more results, a collection, limit the selection to a region and change the period of time. The report 'by country' has an interactive world map and it displays a list of top countries using IRIS. 'Download by countries' option is available for resources of January 2017 onwards. The users can zoom into and click on a country to see downloads by title of the article. Statistics are available at all levels. For the entire global IRIS, one need to click the link at the bottom: at Community level, at Collection level, at Item level, where they can find different graphs and download for each publication and choose a period of time. Besides usage statistics, IRIS also offers altmetrics score for online attention of a publication.

4) DigitalCommon
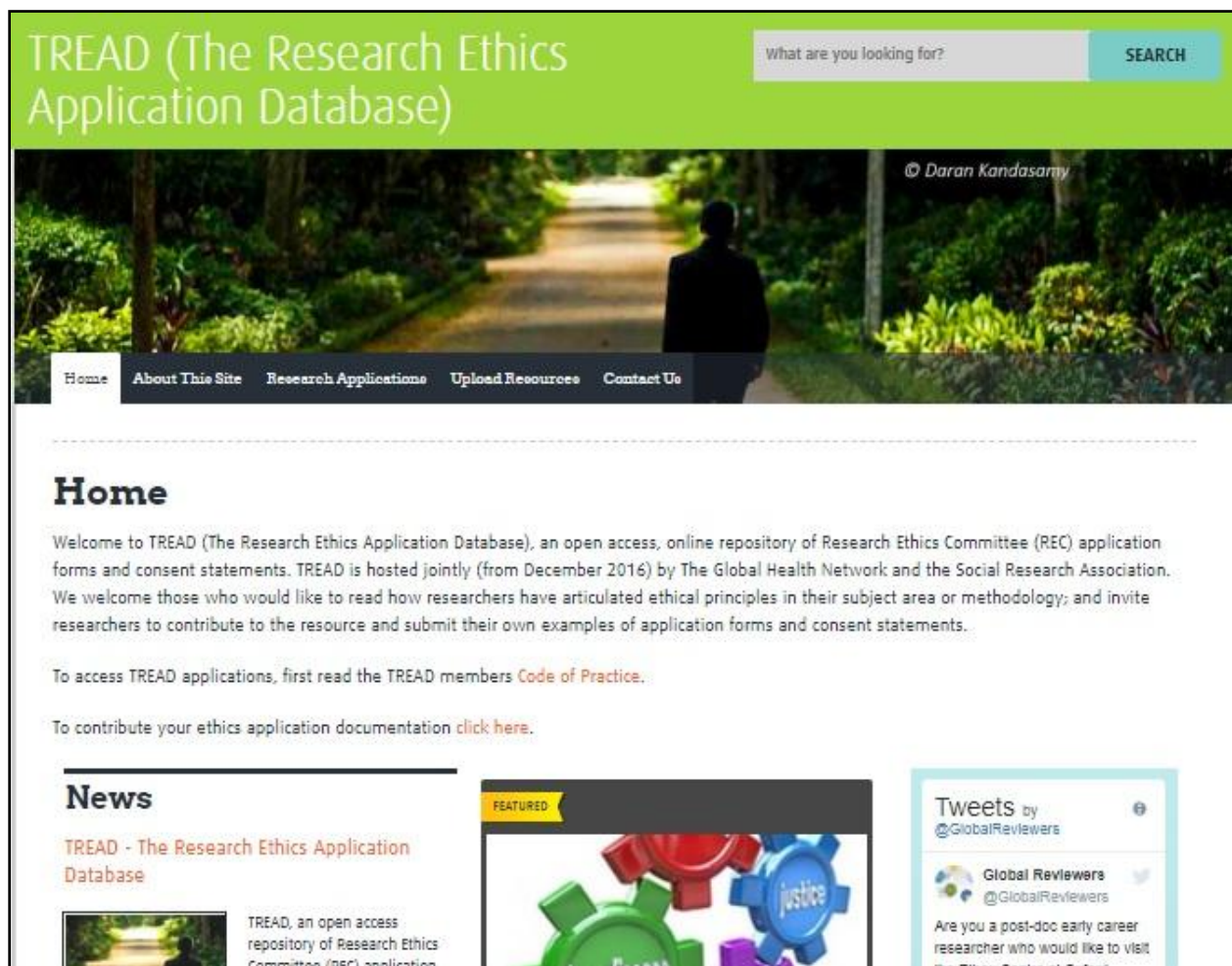**url:** http://network.bepress.com/

The Digital Commons Network brings together **free, full-text scholarly articles** from hundreds of universities and colleges worldwide. The Network includes a growing collection of peer-reviewed journal articles, book chapters, dissertations, working papers, conference proceedings, and other original scholarly work. It has 3,119,497 works from 585 institutions. Scholars need to fill one online form along with submission of work they want to upload on DigitalCommon.

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The website has a multi-colored discipline wheel on front web page. Clicking "Explore" anywhere on the multicolored Discipline Wheel opens a Commons page for a particular academic discipline. From here, users may browse popular and recently added articles, search all content, or "Follow" authors and publications to receive monthly email updates on new work in that field. Apart from this, the Network has listed different academic disciplines at the bottom of the page. It directs to a window of specific discipline. On that web page, on the left-hand side, different sub-disciplines of that discipline are listed. It has other sections such as Popular institutions, Popular authors, Popular articles and Real time world readership map. Users never run into pay walls or empty records, because only full-text, open-access research and scholarship are included in the Network. If the mouse pointer is placed on particular article title, a flash window appears which shows title, author name, abstract and download link to the article.

5) The Research Ethics Application Database (TREAD)

url: https://tread.tghn.org/

It "TREAD is hosted jointly (from December 2016) by The Global Health Network and the Social Research Association." It is "an open access, online repository of Research Ethics Committee (REC) application forms and consent statements." Scholars need to fill one online form in order to submit their articles and the consent statements. On the top of the webpage, there are options such as Home, About this site, research application, upload resources, contact us. Home webpage also contains columns such as news, e-learning and featured news. Researchers have to confirm that they own this work or have permission to use and share in this way all material included in the research application. On the right side of the web page, they have placed twitter column which depicts recent tweets on their twitter handle.

6) University of Winchester's Institutional Repository:

url: http://repository.winchester.ac.uk/

University of Winchester's Institutional Repository showcases the "excellent research undertaken across the University". The organization has a collaboration with 32 of universities of 26 countries across the world. Within those collaborations, there are two collaboration from India; Karnataka University, Dharwad and Christ University, Bengaluru. The Repository is called 'Pure' and it includes including full text search, browse and filter by content type or specialty, and bookmark-friendly content. Pure features a simple, flexible, and consistent user interface design. It provides content in a number of different formats, including HTML and PDF.

It classifies its content into Research Units (departments across the collaborating universities, institutes), Research Outputs (Title of the paper, Name of the authors, Date, Journal name, Volume and issue number, Open access: Yes/No, link to the file, How many readers, social media analysis: no. of tweets etc), Altmetric for analysis, Projects (Title, author, start and end date, type of the project (individual or institutional grant)), prizes, activities (Talk, seminar, etc). Search option contains filters like Type (Anthology, Article, Book), Language, Publication year, Authors, Research units, Collaborators, Open access. Pages are well-structured with headings, and lists which allow users of assistive technology to easily jump around pages and understand content.

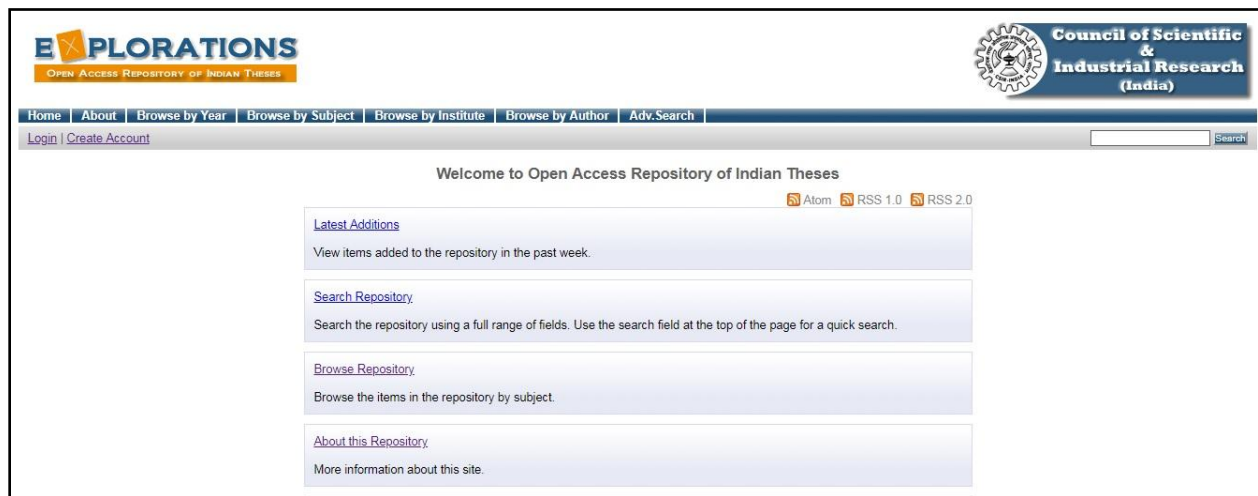Pages employ ARIA (Accessibility for Rich Internet Applications) to enhance navigation, orientation and labeling for users of screen readers and other assistive technology. All books and journals are available as PDFs with searchable text. Pages include a visible skip navigation link to skip repetitive elements. It is accessible for only university students.

7) Council of Scientific and Industrial Research (CSIR) Repository:

url: http://eprints.csirexplorations.com/

It is an open access repository of Indian theses by Council of Scientific and Industrial Research (India). This site is powered by EPrints 3, a free software developed by the University of Southampton. The search options are classified by year, subject, institute and author. Advance search contains keyword and order of the result (year, author and title option). This e-repository is currently partially operational.

Conclusion:

In sum, it would be worthwhile for FMES to consider developing an eRepository that is free, open-access and widely-known. FMES can take pointers from the above-mentioned repositories while not feeling restricted to only these bodies and their databases. Creating a comprehensive eRepository may be a mammoth undertaking and would require coordinating with several parties, regular maintenance and updating records. The existance of such an eRepository would serve researchers, especially in India and particularly those with minimal resources, to have a ready source for further secondary research on their social topics. But this would fall within the scope of FMES and will help it will it provide public health information that is further continuation of its objectives.