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**COHRED**

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Building National Health Research Information System - COHRED

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Health Research Web

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Index

<b>1) Basic Project Information .....</b>	<b>5</b>
Abstract .....	5
<b>2) The Purpose of the project .....</b>	<b>6</b>
<b>3) Objectives .....</b>	<b>7</b>
<b>4) Methodology and project activities .....</b>	<b>7</b>
<b>5) Project Outputs .....</b>	<b>10</b>
<b>6) Project Outcomes .....</b>	<b>21</b>
<b>7) Overall Assessment and Recommendations .....</b>	<b>22</b>

## List of abbreviations:

CAMES:	Conseil Africain et Malgache pour l'Enseignement Supérieur
CHESSORE:	Centre for Health Science and Social Research, Zambia
CNHR:	Consortium for National Health Research, Kenya
CNRS:	Conseil National de Recherche en Santé, Senegal
CODESRIA:	Conseil pour le Développement de la Recherche en Sciences Sociales en Afrique, Senegal
COHRED:	Council on Health Research for Development, Switzerland
CRCF:	Centre Régional de Recherche et de Formation à la Prise en Charge Clinique, Senegal
CSOs:	Civil Society Organizations
DMED:	Department of Medical Education Development, Zambia
EMRO:	World Health Organization Eastern Mediterranean Regional Office
HRWeb:	Health Research Web
ICT:	Information and Communications Technologies
IDRC:	International Development Research Centre, Canada
INDEPTH:	International Network of field sites with continuous Demographic Evaluation of Populations and Their Health in developing countries
INESOR:	Institute of Economic and Social Research, Zambia
ISED:	Institute for Social and Economic Development, Senegal
KEMRI:	Kenya Medical Research Institute, Kenya
NCST:	National Council of Science and Technology, Zambia
NEPAD:	New Partnership for Africa's Development
NGO:	Non-governmental organization
NHRAC:	National Health Research Advisory Committee, Zambia
NHRS:	National Health Research System
PACRO:	Patents and Companies Registration Office, Zambia
PAHO:	Pan American Health Organization
SIST:	Scientific and Technical Information System, Senegal
TREE:	Training and Resources in Research Ethics Evaluation
UCAD:	Université Cheikh Anta Diop, Senegal
UNITID:	Institute of Tropical & Infectious Diseases, Kenya
UNZA:	University of Zambia, Zambia
USAID:	United States Agency for International Development
WAHO:	Western African Health Organization
WHO:	World Health Organization
ZAMFOHR:	The Zambian Forum for Health Research, Zambia

## ***1) Basic Project Information***

### **Abstract**

Health Research Web is a web-based, interactive and growing source of information on the structure and organization of research for health in and for low and middle income countries. The goal of Health Research Web is to maximize the impact of research on health, equity and development in low and middle income countries and to improve the lives of under-served populations everywhere.

This project supported the progression of HRWeb from a web site of static web pages, to phase 2, an interactive platform and management system offering in-depth information on national health research systems (NHRS).

The purpose of this project was to develop HRWeb country pages for Senegal and Zambia, and in doing this, documenting challenges and lessons learned in the development, maintenance and use of HRWeb in these two countries. This was to inform HRWeb's development and strategy on issues and needs of users of web platforms in low income and low bandwidth situations, to guiding the 'scaling up' of HRWeb in other countries.

The main lessons learned touched on the issue of data sensitivity. Users want different levels of accesses and protected spaces for governmental and institutional data. Regarding maintenance and the use of HRWeb, the project team found that the technical and infrastructure conditions are adequate in the study countries and that the real challenge is how to engage users and secure their long-term involvement. The government can play an important role in this process. In Senegal, the government proved to be an essential catalyst for the creation of awareness around the platform among stakeholders.

The major outcome of this project is the development of a new technology, the current HRWeb platform that has been shaped and informed by the lessons learned. While it is too soon to measure the outcomes in terms of user adoption and behaviour change, we can say that adoption and adaptation to this new technology will require fundamental changes in people's and organisations' working culture.

## *2) The Purpose of the project*

Initially, the purpose of the project was to develop HRWeb for Mali and Zambia, and to document challenges and lessons learned in the development, maintenance and use of HRWeb in these two countries.

Since Mali was about to host the Global Ministerial Forum on Research for Health in November 2008, this event had been seen as an opportunity for maximizing the project's impact. However, the Global Ministerial Forum turned to be a barrier for capturing partners' attention and time availability. Senegal was then considered as an alternative country for the project, given that COHRED had already good local partners closely involved in the national health research system. At the same time Senegal would nevertheless provide a West African and francophone focus and perspective. The authorization for the change of focus country was therefore requested and obtained from IDRC.

The purpose of this project thus became the development of HRWeb country pages for Senegal and Zambia, and in doing this, documenting challenges and lessons learned in the development, maintenance and use of HRWeb in these two countries.

Research is a key to development – whether in general science and technology or in specific fields like health. No modern society has developed without substantial and prolonged investments in science and technology or innovation. Yet, many low and middle income countries are lagging behind in this area.

However, research does not automatically translate in development. National management – coordination – and governance of the research and innovation domain is essential if research is to contribute optimally to national development, specifically in resource-constrained countries. Although 'blue sky' research is a key component of a vibrant research environment, curiosity-driven research on its own is insufficient to ensure that major national and international development goals are met. For this to happen, a well-informed national research management system is needed.

Yet, the development of national (health) research information systems that allow policy makers to have adequate and timely information to improve health reduce health inequity and stimulate social and economic development has been hesitant. Even in the 'innovative developing countries' which have made significant progress in research, the extent to which this research can be targeted to deal with major health problems facing their populations, in particular the most disadvantaged, is still patchy. National authorities have little or no access to a practical information and evidence to support their decisions in designing national policies and strategies. And, no mechanisms are in place for inter-country comparisons – which are most useful in providing motivation for change.

In order to help bridge this gap HRWeb has been conceived. It provides integrated information on research for health at country level and regional level. Its organizing principle is national health research systems. It is directed at everyone who has an interest

in increasing the impact of research on health, equity and development in low and middle income countries. It aims to strengthen national health research capability to produce research that is not only excellent, but also relevant, in line with national health research priorities.

During its first phase HRWeb encountered some limitations in terms of data collection, data quality control and its utilization. Therefore, the need to understand the key factors playing a role in the establishment of mechanisms for decentralized operation, local quality control, as well as in the enhancement of shared ownership and increase utilization by country partners.

### **3) Objectives**

The project overall objective was to develop HRWeb country pages for Senegal and Zambia, and in doing this, documenting challenges and lessons learned in the development, maintenance and use of HRWeb in these two countries.

Specific project objectives:

- 1.1 To develop high quality HRWeb pages for the two countries, and to document challenges and lessons learned throughout the development phase;
- 1.2 To set up a quality control and maintenance mechanism for the two countries, including an editorial review process involving country based reviewers, and to document challenges and lessons learned especially in relation to the editorial review process;
- 1.3 To document the use of the HRWeb pages in the two countries, and to document which information is especially relevant or still missing;
- 1.4 To use the lessons learned in reviewing the ‘scaling up’ of HRWeb to other countries.

### **4) Methodology and project activities**

The methodology of this project consisted of the following steps with some modifications per country:

- 1) A Technical Consultation;
- 2) Development of project registry prototype;
- 3) Country visits and country visits’ reports;
- 4) Desktop Internet searches;
- 5) Consensual building of mock-up of HRWeb’s project registry submission form;
- 6) Pre-launch process.

**Step 1: Technical consultation** (Annex 1): with 2 representatives of each country (one from the Government and one from the Research sector); and one representative from

IDRC. It took place in August 2008 and allowed to: i) introduce the project to key stakeholders of each country; ii) obtain a general view of each country's health and health research information system's; iii) obtain an initial picture of the information needs of each constituency; iv) set up a group of country partners who could later act as in-country "multipliers". v) agree on the development of a prototype for a project registry for each country. The participants agreed to provide a set of data that would serve as basis for its development.

**Step 2: Development of project registry prototype** (Annex 2): Its development happened in two stages: i) the technical foundation which was initiated in November 2008 when INESOR, Zambia, sent the first set of data<sup>1</sup>; ii) adjustments happened with the second set of data sent by the Ministry of Health of Senegal. The two set of data were very different. The fields were organized differently and the classifications used did not match. It was evident that the project registry would have to be very flexible in order to be able to capture data produced in different countries. In this case, two different project registries were built to illustrate each country set of data.

### **Step 3: Country visits and country visits' reports:**

**The country visits** consisted of personal interviews and presentations of the project registry prototype and HRWeb in general. The audience comprised key informants from the following constituencies of the National Health Research System: i) Government; ii) Research and Academic Institutions; iii) NGOs and media; the visits lasted each one week and took place in March 2009 - Zambia and May 2009 - Senegal:

The main objectives were to:

- Collect relevant and high quality information for the completion of the Senegal and Zambia country pages;
- Identify interested stakeholders for the establishment of a quality control and maintenance mechanism;
- Identify possible opportunities for implementation of HRWeb phase 2 both at national and institutional levels;
- Identify general challenges and opportunities
- Assess technology culture and limitations;
- Presentation of the project registry prototype.

The country visits implied the following actions and activities:

1. Preparation of tools such as interview guides and indicators;

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<sup>1</sup> 1: "Draft – Annotated Review of Studies on HIV, AIDS, STIs and TB 2001 – 2007" and Essential Health Care Package in Zambia - An Annotated Review of Studies on the Essential Health Care Package in Zambia: 1990-1998 (Central Board of Health / Zambia) Supported by Basic Support for Institutionalizing Child Survival (BASICS), Zambia and Applied Research on Child Health (ARCH) Project, Funded by USAID. November, 1998



2. Setting up of logistics and agenda:
  - a. Building list of people to invite to presentation and face-to-face interview with the support of country partners and IDRC;
  - b. Invitation of participants and interviewees;
3. A general presentation of HRWeb phase 1 and explanation of phase 2 forthcoming developments, with a more in depth presentation of the project registry prototype. This was followed by face-to-face interviews with stakeholders involved in health research at country level.

In addition to the country visits in Zambia and Senegal, HRWeb was introduced to institutions in Kenya. Facilitated by IDRC Nairobi, meetings were held with the Consortium for National Health Research (CNHR), the Kenya Medical Research Institute (KEMRI); the Institute of Tropical & Infectious Diseases (UNITID) and the Kenya Methodist University.

**Country visit reports** (Annex 3 , 4 and 5) were produced within 3-4 weeks after the visit. Both reports were sent to both countries' contacts (for Senegal, in English and French) with the aim of validating the content as well as to inform contacts of each country on the development of the pilot project. Reports were of great utility for contextualizing new contacts on the project's concept as well as on its challenges.

**Step 4: Desk research (Internet searches)** was very useful at various moments of the project: to complete the view of the institutional landscape before and after the country visit; to complete missing information on potential country contacts; to access literature on the country's health research system and the status of ICT in the countries.

**Step 5: Consensus building around HRWeb's project registry submission form** – between June and August 2009. This was the answer to address the differences in the organization and classification of the information. The starting point was countries' data samples provided for the project registry prototype. The various draft versions were circulated amongst Zambia, Senegal and Kenya country contacts including representatives from IDRC for their input and suggestions for change and improvement.

**Step 6: Pre-launch process of phase 2**– during August 2009. This step consisted of i) approach of senior institutional contacts, some interviewed during the country visit and some contacted later, for them to *spread the word* on HRWeb within their institutions and choose the person to become the institutional representative; ii) tutorial sessions of an average of 45 minutes. Through these sessions a group of focal points representing different constituencies from both countries were induced to HRWeb and guided on how to get started into the use of the site. For Zambia, 2 people (NGO and Academia) and for Senegal, 5 people (2 from Government institutions, 2 from Research Institutions and 1 from an NGO).

## 5) Project Outputs

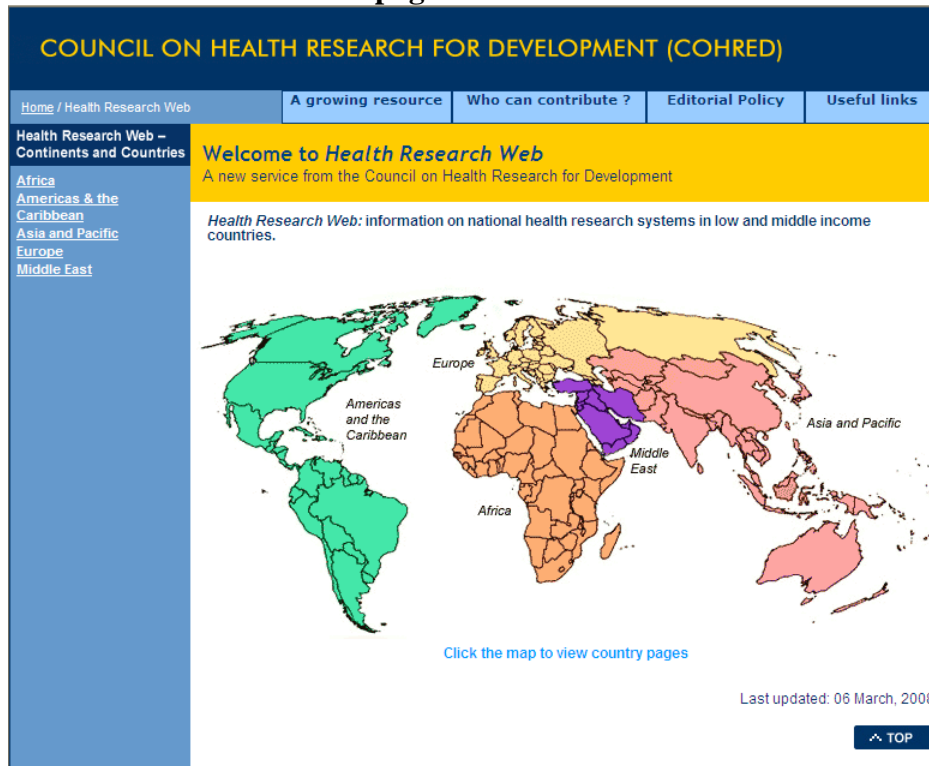
In August 2009, the new interactive HRWeb went live. This moved HRWeb from a repository of static information to an interactive, a platform inspired on Wikipedia model where users worldwide can, for example, create and manage content, launch discussions or open thematic areas related to health research<sup>2</sup>. This interactive mode implied radical changes in the development, maintenance and use of HRWeb. The centralized single data entry was replaced by a multi-access data feeding and sharing. The content of HRWeb now is maintained and assured by its users. As it is an ‘interactive’ platform rather than a ‘COHRED database’ - it will become more useful as more people start using it for information and management.

The outputs of this project are in line with the new technical conditions built in the new phase of HRWeb. The outputs are presented in the following pages:

### 5.1 High quality and informative HRWeb pages for Senegal and Zambia;

This project helped to move HRWeb to phase 2 while focusing on developing Zambia and Senegal country pages. Although there is still some missing information that the project was not able to collect, with the new technical setting users will be able to populate these pages further.

### Screenshot 1: the old main page of HRWeb



<sup>2</sup> It will soon provide a networking functionality to create communities interested in research in specific countries or on specific topics in these countries. In 2010, HRWeb “3.0” will enable cross-country comparisons and analyses, including topics researched, funds given, priorities addressed, findings implemented, and more. To get this started, HRWeb “2.0” needs to be populated with sufficient high-quality information. That is the challenge now.

## Screenshot 2: the new main page of HRWeb launched in August 2009

Welcome to Beta Version HRWeb RSS | English  
**Health Research Web**  
HRWeb: Key information for health research management Log in / Create an account

About HRWeb Who we are Content Help

What is HRWeb?

Click on country of interest or select from the dropdown menu:  
   

**Users of this site**  
Governments  
Research & Academic Institutions  
Sponsors & Donors  
Civil Society Organisations  
Researchers  
Media, Health & Science Writers  
Informed Citizens

**Issue / News**  
Coming Soon  
HRWeb License

**Powered By**

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### 5.2 Country review teams established for HRWeb in the two countries;

During the country visits health research stakeholders from various institutions<sup>3</sup> agreed to become country reviewers (4 contacts for Zambia and 3 for Senegal). Some of them already contributed to further populate their respective “static” country pages and are in the process of creating their profile as country reviewers in the new platform.

As for the static phase of HRWeb, the Zambian and Senegalese partners that are in the process of becoming country reviewers were specifically invited by COHRED. The criteria that guided selection included: i) people were responsive, i.e. they provided feedback to COHRED’s country visit report, the project registry submission form, and

<sup>3</sup> **Zambia:** Prof. Julie Shurgers (Lecturer) Department of Medical Education Development – University of Zambia- School of Medicine; Mr Lloyd Thole (Assistant Registrant IP) Patents & Companies Registration Office (PACRO); Dr. Emmanuel KAFWEMBE (Chairperson) National Technical Working Group on Research in Tropical Medicine; Dra. Mubiana Macwan’gi (Senior Research Fellow) Institute of Economic and Social Research (INESOR). – **Senegal:** Dr. Samba Cor Sarr (Director) Research and Studies Division – MoH; Dr Souleymane Mboup (Director) Laboratory of Bacteriology-Virology – University de Dakar; Prof. Papa Salif Sow (Director) Department of Infectious Diseases - Fann Hospital Dakar.

they contributed to the completion of their country page, by sending documents, providing institutional information, ii) they are senior people in their institution. Despite these selection criteria, it remains difficult to motivate people to contribute continuously to HRWeb reviews. Time availability of country reviewers is a key issue.

An ideal scenario for HRWeb reviewers is to have at least three reviewers for each country or for each regional page – representing government, research or academic organisations, and CSO/NGO, and being both senior and junior thus bringing a balance of expertise and availability.

In the current HRWeb phase, users interested in becoming a reviewer can submit a request through HRWeb. Selection of reviewers is based on their Curriculum Vitae and the criteria listed above (responsiveness and availability). In return for their services, HRWeb acknowledges their support by listing all country reviewers and – if they wish – including a short bios ketch on the 'country reviewer' pages.

The new phase of HRWeb provides an RSS feature that not only informs reviewers of new interactions within their pages but hopefully also encourages them to verify correctness of the information. The system provides a discussion channel where by the reviewer could hold a discussion and flag out any inaccuracy. Should this inaccuracy imply on a sensitive matter the reviewer could use a direct channel to communicate it to COHRED. In case of disputes concerning information on, and use of HRWeb, an expert advisory panel would intervene.

### 5.3 Documenting the use of lessons learned in adjusting *HRWeb* data-collection, validation and maintenance approaches and strategies in improving utilization and in increasing *HRWeb* interactivity.

#### **Data Collection**

*From centralized data feeding towards decentralized data sharing where the user is the key player*

The lessons learned in relation to data collection reflect a common scenario for both countries, Zambia and Senegal:

- **Facilitate access to data**

Based on the country visits it was identified that although there was a fair awareness of the key stakeholders regarding the main policy documents, the access to them implies a major effort and it is time consuming. In Zambia, it can even entail paying out for the service sometimes. Many of these documents are placed in the institutions depending on the different sector involved in research for health. In fact, stakeholders expressed the need of a single place where they could find this information.

This project confirmed the need of an interactive platform. Providing users the access to the system minimizes the layers between the source of information and the user. The user now becomes the major source of information and data feeder.

- **Security and control of data in the interactive platform**

A particular concern expressed by government representatives was the sensitivity of data in a platform based on the Wikipedia model. This concern has been addressed with the creation of reserved spaces accessible by institutions through protected passwords. In this manner, official information can be displayed, viewed, downloaded and printed but not changed or modified by the users. This is also possible for research institutions, research ethics committees, civil-society organizations and other institutions that formally request this level of user access. In summary, through this mechanism, the institutional information can be entered, modified and kept up-to-date only by the institution concerned.

- **Data format compatibility**

Since this new *modus operandi* will result in a massive flow of institutions willing to use the system, the need of a flexible platform is evident. The system should be able to accommodate a broad diversity of data format (e.g. links to original sites and documents in PDF, DOC, EXL and TXT files, images - JPEG, BMP and GIF). The content should be written by the users themselves, or copied from a public domain or similar free resource (No copyright work without permission should be submitted).

HRWeb allows different groups of users to add and edit content using a password according to their institutional membership. Each group of users is granted a specific profile that allows different levels of interaction within the site. There is no anonymous editor and all editions are tracked by the log history function. In order to add or edit content in HRWeb the user has to agree to the editorial policy and to a level of access agreement where he/she commits to not submit copyright work without permission.

Data collection was a major challenge in HRWeb's first phase, which consisted of the creation of 82 country pages from low and middle income countries. Data collection and data entry were done on a centralized way (COHRED staff) but it soon revealed its limitations in terms of the accessibility of the information, its accuracy and maintenance. The load of information was greater than the management capacity. The information from phase 1 was migrated to the new interactive platform Phase 2, which now can be updated by the concerned user.

## **Quality control and data maintenance**

### *Facilitating country reviewer's involvement*

In general, during the static phase the reviewers proved not to be very responsive. From both countries of the pilot project, there were only reviewers from Zambia who were not very present. It was noted two factors that may have had an affect in the responsiveness of them: i) the mechanism in place was not very user friendly and implied a major effort in both parts (COHRED and Reviewer) ii) technology limitations (e.g. low bandwidth) causing long wait before the screen.

With the new phase a series of mechanisms were developed to address quality control issues and facilitate country reviewer's involvement. Some of these mechanisms were discussed with the people who have accepted to be country reviewers during the country visits. The mechanisms to address the factors mentioned above are:

User-friendliness:

- **The RSS** - Really Simple Syndication mechanism, which the user can subscribe to automatically be notified when changes has been posted in his/her concerned country page in HRWeb. This would minimize the time invested in the process
- **The discussion function** will allow country reviewers to indicate and comment inaccuracies on the spot within the concerned section of HRWeb.
- In addition, a **direct channel** where country reviewers can send messages directly to HRWeb team members will be in place.

Technical limitations:

- The site was restructured to consume less bandwidth.
- The current server provides a more secure scenario than the server used to host HRWeb phase 1. This is because in the current server the latest versions of MySQL database and web server are used.

It is still too soon to draw conclusions on the impact of these new mechanisms. The people who have accepted to become country reviewers for both countries have been informed of these implementations. The reviewers are now enabled to register themselves in the new interactive platform as such.

## **Utilization**

*More than the technical and infrastructural conditions, the real challenge for the utilization of HRWeb is its popularization.*

From both country visits it was identified that Internet plays a major role in day-to-day practice. Even though they do not present similar level of infrastructure – Zambia presenting low connectivity and Senegal rather optimal - the use of Internet is equally important. The relation number of computer vs. number of staff from the institutions visited in both countries is optimal. Based on our interviews, it was noted that in:

- **Zambia** – With regards to technology limitations, except from academia and media, the access to modern computers and high speed Internet is rather satisfactory. Nevertheless, connectivity in the country presents infrastructural limitations (i.e. slow response during rush hours, power cuts, etc). In summary, the use of internet for information access is still a daily challenge for some of the people interviewed. Eastern Africa is in process of upgrading their Internet connectivity<sup>4</sup>.
- **Senegal** - The Internet infrastructure in all institutions visited is satisfactory which sets ideal conditions for the implementation of HRWeb.

In relation to the information and services that HRWeb used to provide in phase 1, the different types of constituencies we visited (e.g. government, NGOs, research institutions, academia, and media) expressed their satisfaction. Nevertheless, according to their concrete information needs, HRWeb still had to be improved. An overview of the technical outputs achieved during this project is provided below:

Expressed needs of information and services for which technical conditions have already been implemented and are ready to be used:

- Events under the key institution section
- Sentence/abstract describing what is in the link
- Indication of size of the documents
- Pages to be presented in multiple languages (translation in progress)
- Health research projects information
- RSS feeds
- Pages broken into sections
- Search function
- Grey literature may be posted under information resources section

Needs that will be addressed soon

- Source of funding (Grant Opportunities)
- Capacity building Information
- Training opportunities
- Social Networking

Needs that are not aligned with HRWeb's mission

- Electronic journal to publish original articles

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<sup>4</sup> Rittel C.I. A new era dawns on Africa's east coast. Development and Cooperation Vol.36. 2009:7-8, p. 268

A comparative table of the achievements is provided below:

<b>Information and Services</b>	<b>Phase 1</b>	<b>Phase 2</b>
Governance and Policies Documents	X	X
National Health Research System Map		X
National Health Research System Brief		X
National Priorities Documents	X	X
Summary List of Priorities		X
Key Institutions / Networks (Links and Directory)	X	X
Key Institutions / Networks (Virtual space where information such as their mission, their priorities, initiatives, events, etc. is provided and managed by themselves)		X
Ethics Review of Health Research (Documents, Map, Brief and Ethics committees)		X
Research Financing and Partnership	X	X
Health Research Project and Publications (Annex 2)		X
Information Resources	X	X
Country Background	X	X
Discussion For a		X
Social Network Facility (coming soon)		
Idea Box		X
Multilanguage (coming soon)		

As described above, the technical and content challenges have been addressed. Infrastructural limitations, where they exist, could imply on extra effort for the user but not stop them from benefiting from HRWeb services. The key to developing HRWeb as an interactive platform is continued user involvement and recognition by users that this is a resource that can help them in their daily work in research and research management.

**5.4 Detailed overview of the utilization of the two HRWeb country pages (compared to HRWeb general), and an insight in barriers and supportive factors for the use of HRWeb in the two countries;**

For the period when the pilot project took off (phase 1) HRWeb team was busy shaping the content and ensuring its quality through a pool of country reviewers. HRWeb was still in its beginning stages of development and the need to have a more refined statistic tool had not been addressed. During that phase HRWeb was part of COHRED's site and the statistics tool used in order to track its the utilization could provide a very general overview, for example, whether a document was downloaded from HRWeb or if HRWeb was accessed as entry point to the site.



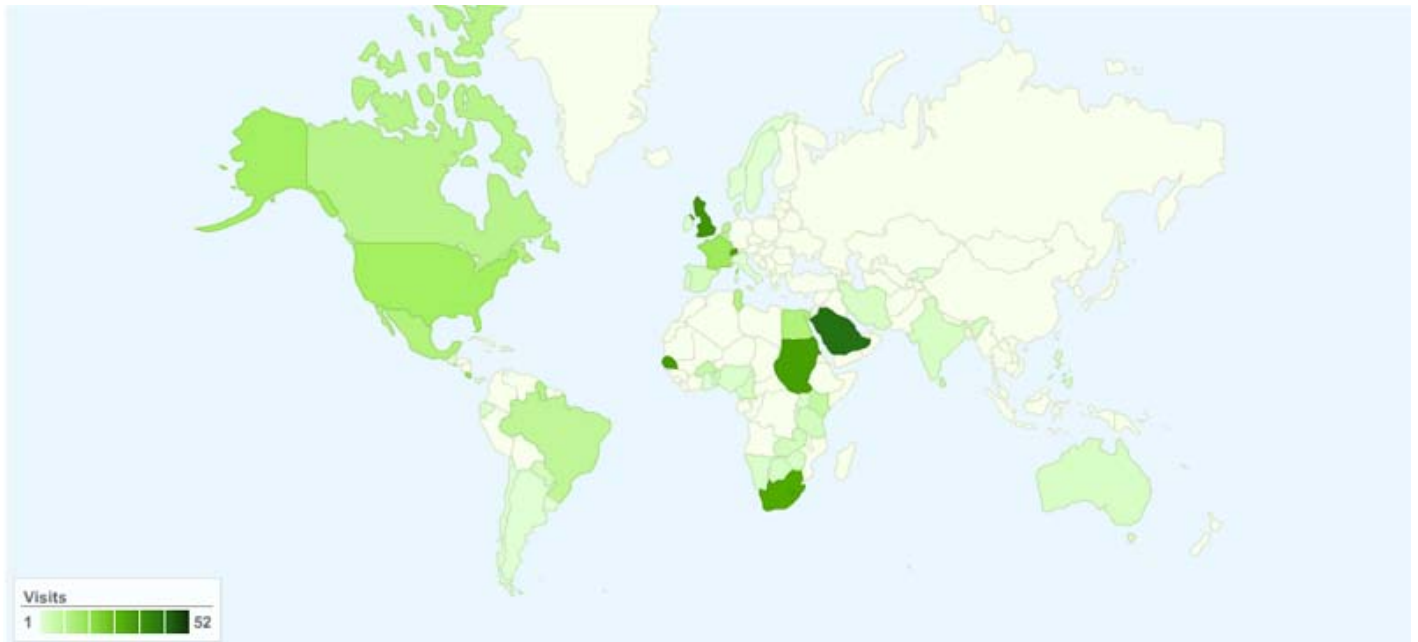
Analysis were done in four different moments of the pilot project leading to the conclusion that the information provided was not enough to identify any utilization trends. The need of a refined tool was then evident.

Now that HRWeb has achieved Phase 2, it is no longer part of COHRED's website and it has its own domain [www.healthresearchweb.org](http://www.healthresearchweb.org). This technical aspect is complemented by a major output of this project: the setting up of statistics tools to measure HRWeb usage in various scenarios:

1. Users interacting with HRWeb (Tool built by HRWeb team)
  - a. User profile (nationality; profession; distribution of users by constituencies)
  - b. Geographical location
  - c. Updates in countries
  - d. Discussions held
  - e. Documents uploaded
2. Visitors accessing HRWeb (Monitoring service provided by Google – Google Analytics)
  - a. Visitors loyalty (How many times a user visits the site, how long ago the user visit the site from his/her return, how long the user stays in the site,
  - b. Bounce rate
  - c. Connection speed
  - d. Documents downloaded
  - e. Geographical location (comparison between countries)
  - f. Country pages and different sections within the page
3. Visitors accessing HRWeb (Monitoring service provided by host)
  - a. Data traffic (Documents downloads)
  - b. Type of files and bandwidth

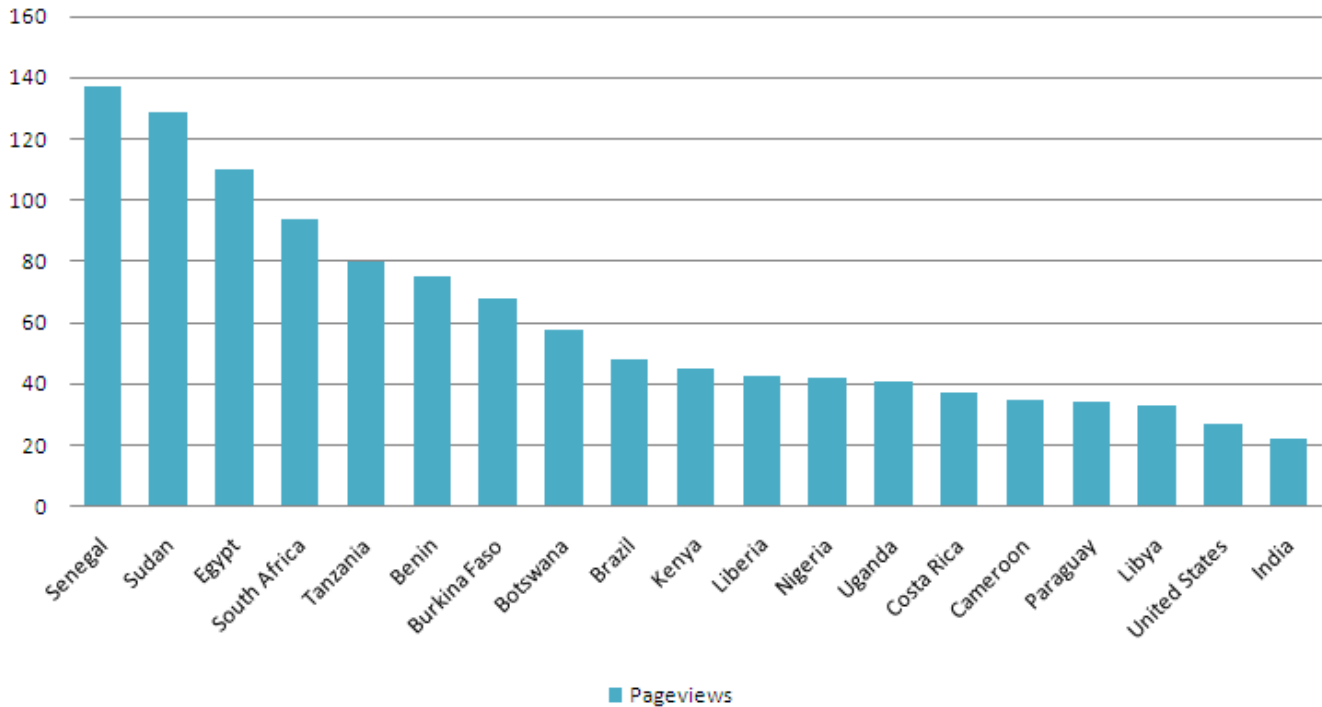
Examples of the statistics mentioned above (August 27<sup>th</sup> through September 23<sup>rd</sup>, 2009):

**Screenshot 3: 492 visits came from 53 countries/territories**



	Detail Level: <a href="#">Country/Territory</a> ▾	Visits ↓	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate
1.	<a href="#">Saudi Arabia</a>	52	13.15	00:20:45	13.46%	25.00%
2.	<a href="#">United Kingdom</a>	41	3.44	00:01:50	36.59%	58.54%
3.	<a href="#">Senegal</a>	38	9.53	00:14:31	44.74%	7.89%
4.	<a href="#">Sudan</a>	38	3.45	00:04:05	76.32%	47.37%
5.	<a href="#">Switzerland</a>	38	7.63	00:07:47	39.47%	18.42%
6.	<a href="#">South Africa</a>	35	9.57	00:19:18	34.29%	25.71%
7.	<a href="#">Costa Rica</a>	20	5.30	00:08:10	25.00%	60.00%
8.	<a href="#">France</a>	19	3.58	00:04:22	57.89%	15.79%
9.	<a href="#">United States</a>	18	2.72	00:01:10	66.67%	44.44%
10.	<a href="#">Egypt</a>	14	10.43	00:13:56	42.86%	7.14%

## Top 20 visited countries



This first set of statistics only covers three weeks and therefore only gives a first impression of use of the new interactive site. Some of the site visits captured by the statistic tool are due to interactions from COHRED's partners updating country pages (e.g. Saudi Arabia). They were not spontaneous visits; however the statistics shows how the interactions with HRWeb will be tracked.

In conclusion, during phase 1 there was not enough data to measure the use of HRWeb in either of the countries and therefore to have an estimation of the popularity of the website prior to the pilot project. Once the pilot project was in place it was evident that the first challenge of the project was going to be introducing HRWeb to partners. During this process various barriers and supportive factors were identified.

### Barriers and Challenges

**In relation to both countries,** the first challenge of the project was to raise the interest and involvement of interviewees while in a transition phase. It was an interesting exercise to show the initial stage of HRWeb and encourage their engagement in its development since sometimes HRWeb was perceived as a competition. Currently, the difficult task is to build ownership towards a service that they helped to build.

The cultural factors of the use of the tool present more of a challenge than the technical limitations. There is a lack of data and information sharing culture which implies a twofold challenge: i) a culture change to encourage researchers to share information; and

ii) raise researcher's interest in the use of HRWeb as a means of disseminating and monitoring their research results. This is strongly linked to the fact that researchers still tend to report back in hard copies.

In addition, the concept of Wikipedia was not very popular amongst the interviewees and very few of them had heard of it beforehand. HRWeb was inspired on the concept of open sources and data sharing and for some stakeholders the site came across as being too open and democratic. This remains as a challenge.

**Specifically for Zambia**, the involvement of the government in the process remains one of the major challenges. Unfortunately, this constitutes a barrier since the government could play a crucial role in the legitimacy of the tool before the different constituencies.

Another feature that implies a major challenge in relation to the use of HRWeb is the poor connectivity of the University of Zambia which hosts the University Teaching Hospital and other carriers related to public health.

### **Supportive factors**

**In relation to both countries**, the need of a health research management information system was evident, both at national and institutional level. HRWeb was seen by the different stakeholders as having a great potential to bridge various gaps:

- Can be used as an advocacy tool to push government to get more involved in research.
- Presents the opportunity to have a single window where the local capacity and efforts in research for health could be shown at national and international level. HRWeb as an inclusive and integrating platform allows space for comparison between countries (third phase of HRWeb – Meta-analyses). Furthermore, HRWeb intends to be complementary to the existent websites, where key national institutions have the opportunity to use it. The control is given to them through a protected password.

Lastly, partners from both countries expressed their concern about how to make HRWeb data more relevant for research for health scientists and thus provide a wider scope to the usefulness of the tool. Technically speaking, this is already possible through the submission form that was built by consensus with the different stakeholders met in Zambia and Senegal. Users will be able to identify and screen projects that fall under other fields such as social science, agriculture, environmental science, etc. The challenge is mostly placed in how to make other communities of scientists become users of HRWeb. This aspect should be considered as part of a marketing strategy to be built.

**Specifically for Senegal**, the new Minister of Health continued the ministry's commitment to HRWeb. Furthermore, there was a very positive note from the General Director of the Ministry regarding their serious interest in ICT and that HRWeb could count on their support. From the Government's perspective, HRWeb will allow a better

understanding where the health research is being done, it will help to create the conditions to better allocate resources for research for health in the country.

Academia and Research Institutions identified in HRWeb the benefit for national collaboration and key partnership building among themselves. It could play an integrating role between institutions that have not yet interacted. Particularly for academia representatives, a big concern is how to capture what is done within training institutions at national and regional level. Much of the academic production is not disseminated and therefore not shared amongst the scientific community and the general public. HRWeb is seen as a good opportunity for students to build partnerships around common interests since the training period and as a means for participating in the knowledge production cycle. HRWeb intends to have a second level of information in the submission form through which student's projects could be submitted.

Another supportive factor that characterizes Senegal partners' implication in the use of HRWeb is that some of the partners contacted are acting as "multipliers" amongst the National Health Research System community. New stakeholders have become users.

Last but not least, WAHO (the Western African Health Organization) is interested in getting involved in HRWeb. A regional organization, it could play an important role in HRWeb: i) facilitating the scaling up to the other countries in the region; and ii) using HRWeb as a platform for their initiative on mapping research institutions.

## **6) *Project Outcomes***

The major outcome of this project is the development of a new technology, the current version of HRWeb that has been shaped and informed by the lessons learned through out the entire pilot project. It is too soon to measure the outcomes of this project in terms of its adoption and adaptation. What can be said so far is that the adoption and adaptation of this new technology is deeply linked to a change of working culture.

The first interactions with the new version of HRWeb already started. Eight people from Senegal are now registered and 5 from Zambia. Out of the 13 people 7 people were introduced to HRWeb through the pre-launch process. Only two were already engaged with phase 1 of HRWeb.

As noted in the statistics provided above, Senegal fills the third position in the top ten visitor countries and the first position for the top 20 "country pages" visited. This can be seen as a promising sign for future user engagement.

In addition, there is a large variety of requests for collaboration around HRWeb. For example from NEPAD Science & Technology, from WHO regional offices (PAHO, EMRO), from thematic networks (INDEPTH), to institutions at country level (governments, research institutions, CSOs).

In fact, a Memorandum of Agreement between PAHO – Pan American Health Organization and COHRED to use HRWeb for utilization, dissemination, sharing and displaying of information on national health research system has been signed. Some of the Latin America countries have started to use the new platform (e.g. Paraguay and Costa Rica).

The visit to Kenya was a good opportunity to broaden the scope of potential users and beneficiaries of HRWeb in the East African region. It allowed to reflect on the questions, issues and lessons learned from the Zambia visit, with a different group of people. Expressions of interest from various institutions, KEMRI, CNHR and Methodist University, were received, and are expected to turn into tangible user involvement in future.

### ***7) Overall Assessment and Recommendations***

The support of IDRC came at a very good moment for the development of HRWeb. From being a repository of static information it became within 18 months an interactive, ‘wiki’-based platform where users worldwide can create, manage and graphically display content, launch discussions and open thematic areas related to health research.

The activities undertaken during this period of time helped to better understand user needs for on-line information on health research in Africa as well as to document challenges and lessons learned in the development, maintenance and use of HRWeb in a developing country context. They also allowed populating both Zambia and Senegal country pages.

The key messages resulting from the pilot project are:

- **The need for ownership.** Senegal illustrated how the support from the government helped to promote and legitimate the tool. In Zambia the government ownership was not achieved. This may have been caused by competing interests (other organisations and initiatives competing for the scarce time of the health professionals), or people may have been occupied by other issues, for example the corruption scandal in the health sector, that were beyond our control. The key issue is though that sufficient time needs to be given to developing ownership and to understand how HRWeb can be integrated and linked into existing government systems – so that it supports such systems and not competes with them.
- **HRWeb needs to be available in languages users are most comfortable with.** Thus far the site is displayed in English, and French and Spanish translations are in progress. But other languages will have to be added when we plan the roll out of HRWeb to other geographic areas (i.e. former Soviet Union countries, or the Arab world).
- **A multi-stakeholder approach works well in engaging people.** In both Senegal and Zambia multi-stakeholder meetings were held, which facilitated the understanding of various needs for the HRWeb team as well as for the people attending these meetings. The multi-stakeholder approach used within HRWeb,

has also resulted in a large variety of requests for collaboration around HRWeb. For example from NEPAD Science & Technology, from WHO regional offices (PAHO, EMRO), from thematic networks (INDEPTH), to institutions at country level (governments, research institutions, CSOs). The opportunity to work further with these various stakeholders needs to be used in the most optimal way to ensure the best development and use of HRWeb.

To further develop HRWeb as the platform for information on research for health, we foresee two key strategies:

- **Further technical improvements of the platform will continue** making it as user friendly and responsive to user needs. One such need is further ownership so that people can use HRWeb as their own site that also has their organisations' visual identity.
- **Further strategizing needs to be done to the best approaches to 'roll out' HRWeb**, learning from this pilot project and from the upcoming collaboration with a variety of partners at national, regional and global levels. We need to address questions about marketing, stimulating use, technology development, ownership, and monitoring and evaluation.

A good strategy and business plan, together with ongoing growth in technical terms as well as through strategic partners, will further help make HRWeb a key tool for research for health.

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