**Brief report**

# Building a Sustainable Capacity for Health Research and Education in Africa (Africa Build): How Far in Cameroon?

Djientcheu Vincent de Paul[1], Kamga Yannick[2], Bello Figuim[3], Ongmeb Boli Anne[4], Noumsi Tchemgui Nathalie Flore[5], Alima Roland[6], Nko'o Amvene Samuel[7]

[1]Neurosurgeon, Pedagogic Responsible for program training in neurosurgery, Focal point FMSB's web site, president of the Cameroonian Association for Health Informatics, Lecturer of Neurosurgery and Medical informatics
[2]Resident, department of public health, member of Cameroonian Association for Health Informatics
[3]Resident, department of surgery, member of Cameroonian Association for Health Informatics
[4]Medical Doctor, Former medical coordinator for the French speaking African Network for Telemedicine, member of the Cameroonian Association for Health Informatics
[5]Medical Doctor, Deputy chief of the Center of Reference for Anti retroviral treatment (HAART), member of the Cameroonian Association for Health Informatics
[6]Informatician of the FMSB, member of Cameroonian Association for Health Informatics
[7]Radiologist, Former Vice Dean in charge of academic affairs, chief of the residency division, member of the Cameroonian Association for Health Informatics, Professor of clinical radiology
*Corresponding author:* *Djientcheu Vincent de Paul, Yaounde Central Hospital.*

## Abstract
Africa Build is a project supported by the European Union that aims to improve the capacity for health research and education in Africa through information technologies (IT). To achieve this global objective six sub objectives have been defined and grouped into Work packages. The project involves nine partners. We conducted an observational study in which the authors report the working process of the Africa Build project in our University and the teaching hospital. The achievements, the impact, the perspectives and the future actions in our University environment are also presented. The Africa Build project is probably may be a good example of international collaboration.

**Key words:** Health research, health education, information technology, Africa.

## INTRODUCTION
Africa Build is a project supported by the European Union that aims to improve the capacity for health research and education in Africa through information technology (IT). To achieve this global objective six sub objectives have been defined and grouped into Work packages (WP): to analyze the state of the art in Africa and draw a road map for future European actions (WP2), to develop a collaborative infrastructure (Africa Build portal) and virtual communities (WP3), to develop didactic content online (WP4), to develop centers of excellence and mobility exchange opportunities (WP5), to validate the methodology through two pilots courses (WP6) and to disseminate the outcome and scientific productions (WP7).

The project involves nine partners: the Universidad Politecnica de Madrid (UPM, coordination of WP1), the Ministry of communications and information technology of Egypt, the University of Bamako, the University of Geneva, Prins Leopold Instituut Voor Tropische Geneeskunde of Antwerp (ITM), the World Health Organization (WHO), the University of Yaounde I (FMBS) and the University of Ghana.

Many tasks have been assigned to each partner. The rationale of this study is to report the implementation, the evolution and the impact of this project in

Cameroon in general and at the Faculty of Medicine and Biomedical Sciences in particular.

## METHODOLOGY:
This was an observational study in which the authors report the working process of Africa Build in our University (FMBS) and the teaching hospitals. The achievements, the impact and the perspectives of the project in our university environment are described. The coordination, the collaboration and the interface between the different partners are mainly done online (e-mails, Skype meetings) or during consortium meetings. The local Africa Build team works online and during face to face meetings but we communicate efficiently with local participants (people who are not members of the project) through phone calls, face to face interviews, seminars and workshops.

## RESULTS
The project proposal was rejected in 2009 and 2010. In 2011 it was finally accepted after many revisions. A consortium agreement[1,2] was signed by all partners and the executive phase started on the 1st of July 2011 and will end on the 31st of July 2014. A kick-off meeting was organized in Madrid from the 03rd to the 06th of September 2011. The FMBS was represented at this meeting.

Figure 1: Members of the **Journal Club** during a meeting for article review. From left to right: Pr Nko'o, Pr Djientcheu, Dr Moulion Tapouh, Dr Haoua Tebere, Dr Oumarou Alim. (Dr Edzimbi Annick was absent)



Figure 2: Members of the Cameroon **Africa Build team**: from left to right: Dr Noumsi, Dr Bello, Pr Nko'o, Pr Djientcheu, Dr Boli and Dr Kamga (Mr Alima was absent).

### A. Work package 2:

The FMBS has participated in the elaboration of the questionnaire that was sent to researchers, lecturers, Directors of institutions and Decision makers. This was sent to evaluate the state of art in our region, the needs and the requirements of our local institutions. The ITI (leader of WP2) collected the data which were presented during the consortium meeting at Antwerp on the 17th and 18th of June 2013. The next step is to draw a road map and Cameroon will propose a draft.

### B. Work package 3:

The FMBS took part in the construction of the Africa Build Web Portal (ABP), which is a collaborative infrastructure for creation of e-learning resources, for sharing scientific data and for the creation of virtual communities of researchers. Cameroon has created a virtual community, but the performance is not optimal. During the consortium meeting, the other African partners presented the same difficulties and a brainstorming was performed to improve this aspect. The open source library was elaborated in the ABP by the FMBS. The next step is to create virtual communities where researchers involved will be motivated by a common objective predefined by the different groups.

### C. Work package 4:

The FMBS team of Africa Build proposed topics to lecturers. These lectures were given online using the DUDAL software. The lectures proposed by other countries were broadcasted in our Faculty and in some teaching hospitals. Those lectures were archived in the DUDAL software and could be re-used.

Since the ABP is functional, the next step will be to develop didactic content through this portal and archive inside. The environmental health course will probably be the main topic.

### D. Work package 5:

A Questionnaire was elaborated with the collaboration of FMBS on the needs and requirements of the faculty in the field of research and education. A template of mobility offers and demand was also elaborated. The lecturers of our institution were interviewed to identify the training needs.

- A doctor was sent to Geneva for training in a Master in Medical Informatics (co-financed by the FMBS-Africa Build branch and the Switzerland cooperation).

- After a long period of vulgarization of e-learning in our faculty and a massive sensitization of decision makers of the institutions, an amphitheater (R11) was dedicated to e-learning. The upcoming action will be to equip this room for the purpose (window blinds, sound equipment and video projector, laptop and internet connection).

- We introduced e-learning and medical informatics in the young neighboring universities (the University of Buea) and some private institutions (Université des Montagnes). One of our team members was sent to Antwerp to receive training on the Moodle platform. The leaders of computer science clubs of those institutions came to Yaounde and were trained on Moodle, the DUDAL software and on the broadcasting of e-courses.

- The official journal of the Faculty (Health Sciences and disease) was modernized. This periodic paper was converted to an electronic version (submission, revision, publication). The management team of the

journal is made of residents (Figure 1) who benefited from the pilot course and the workshop on scientific research. The paper version was published irregularly (funding problems, technology gap, reviewers' unavailability etc…).

### E. Work package 6:

The team from Antwerp (Leaders of WP6) came to Cameroon for the conception of the pilot courses[3,4] with the Cameroon team (Figure 2). After a meeting with the lecturers of the Faculty and the administrative staff, we began to elaborate the objectives of the pilot courses, the content, the duration, the timing and the profile of the trainees (selection criteria). The recording and broadcasting of the courses took place between February and April 2013. Lecturers from Yaounde, Bamako, Antwerp and the WHO were involved. Trainees were from different departments (Public health, neurosciences, radiology). Following these results[5], the key to success is a good selection of candidates, using personal motivation of the candidate as main criterion. The next step is to give access to all students involved in writing a thesis even in the neighboring universities.

### F. Work package 7:

At several occasions, we presented the AB project and its evolution, the place of IT in research and education:
- Conferences have been organized at the FMBS, the University of Buea, the "Université des Montagnes" for a wide dissemination of the concepts and realizations of the AB project.
- Scientific meetings
- Staff meetings of departments: Africa Build's activities have been presented during staff meetings to sensitize lecturers and residents
- Link to website: The technical team has created links to some websites notably the FMBS website, the journal of the Faculty, the SOCIM website etc...

### DISCUSSION:

In African countries in general and Sub-Saharan African countries in particular, there is a large mismatch between the offer and the demand, the needs and the realities, the requirements and the feasibility in terms of education, health care and health research. The number and the qualification of the personnel are not usually adapted and the didactic material and other material resources as libraries, laboratories are limited. Many initiatives have been experimented to compensate the gap: the northern countries gave easy access for trainees coming from the south but the few number of post trainees coming back was a disappointment. The sending of second hand material to developing countries encountered the problem of maintenance. When the material was sophisticated, the receiver institution was unable the buy a new one. Among those methods used in the past none appears to be the best so there is a need to develop a new concept to build a sustainable capacity for education and research in health in Africa.

Information Technologies nowadays appear to be a reasonable approach to lower the North-South gap. The Africa Build project is a good opportunity for partners to build a sustainable capacity for education and health research in their university and then transfer it to the neighboring institutions. This project has demonstrated the possibility of good international collaboration: the online multilateral building of a portal (different tasks assigned to each country), sharing of lectures on line, creation of a platform where offers and demands of different countries can be exposed. The future challenge of the project is to make the portal a meeting interface where researchers can share their experience, the outcome of their research through virtual communities and an open source library.

Africa Build project is not a project easy to achieve. In other projects, the actions are precisely pre-defined and the project consists essentially of the execution of those actions. The particularity of the Africa Build project is that the executive phase combines the conception and the execution of different tasks, keeping in mind the guidelines assigned in the document (work description). This internal characteristic of Africa Build project is an opportunity for partners, especially the partners from south to express themselves. It is probably the best way to draw a road map for future investments by the European Union. Instead of acquiring material and stock, our philosophy is to create a team in which members are involved in the life of the faculty and the teaching hospital, to brainstorm, to take actions, to sensitize and to accompany the decision makers and the personal. Furthermore, they should be able to participate in the spread of IT in our environment.

### CONCLUSION:

The Africa Build project is a good example of an international cooperation. It is an attractive model to south-south and south-north collaboration. Information technology seems to shorten the distance between both communities. The main challenges include the local appropriation, the spread to neighboring institutions and countries and the long term sustainability of these activities. Our wish is to benefit from the remaining time to find solutions to face this challenge.

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