

## How National Research and Education Networks (NREN) can assist universities to cope with the growing student numbers and to qualify lecturers

In developing and emerging countries the higher education sector is growing very fast. View to the demographic statistics it might be assumed that the student numbers in undergraduate programmes will double or triple in the next decades. Tight budgets in all countries limit universities' activities to keep path. Most likely universities will respond with additional restrictions for enrollment that student numbers stay manageable. This will retain many talented students away from universities. Urgent and inexpensive solutions are requested from politicians, economy and universities in order to offer talented students from all social classes access to higher education that at the end they will be able to contribute to the economic development of the countries. Taking Ethiopian higher education sector as an example for developing countries: in 2016 41.5 % of the population is under 15 years of age; in the academic year 2015/16 overall 3.8 % in the age group of 15 - 24 years (20% of the population in 2016) have been registered in university undergraduate programmes. Considering the 3.8 % as benchmark in education statistics a considerable increase in the absolute number of undergraduate students might be expected in the coming years. On the other side almost 40% of university lecturers have a lower degree than a Master's degree. These numbers show the urgency of finding affordable solutions to accommodate the ever growing number of students and to have a sufficient number of qualified lecturers available that students-lecturer ratios are approaching to the international level.

This research will focus on NRENs and their possible contributions to ease the current and future situation at universities. So far, the African NRENs provide high speed internet for national universities, link national universities and provide the bridge to the regional NRENs and further to the European Research and Education Network GEANT. NRENs have the information and communication technology (ICT) knowledge, which focuses on the establishment and maintenance of the ICT infrastructure in the higher education sector. NRENs see traditionally the universities as their clients and not the end users – the students, lecturers and researchers. From a general point of view, NRENs are providers of national digital university networks and repositories as well as cloud spaces work on technical solutions to make and keep the national digital university networks accessible and operable. It is not on NRENs current focus to bring digital literacy to users.

In elaborating valuable arguments to empower NRENs as partners in the development of the higher education sector the research question is the following: What kind of activities NRENs could take over as experts for digitization to contribute to improve the current and future challenges of universities in emerging and developing countries?

This research is considered as a pilot study in Ethiopia with 36 public universities. Structured interviews with selected university managers will deliver data for the analysis how the Ethiopian NREN (EthERNet) could support universities in increasing digital literacy among lecturers, researchers and students - aside from it genuine task: the provision of the high speed internet facilities.

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