

Title: Training Statisticians for Africa: Has the programme succeeded?

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Abstract:

It is now half a century since training of statisticians for Africa started. Several training institutions were set up to meet the demand for statisticians in Anglophone, Francophone and Lusophone Africa. Yet, to-date statistical offices in many African countries are still unmanned and are still in need of more qualified statisticians. What has happened to the training programmes over time: have they succeeded or met insurmountable challenges. The paper will evaluate efforts of various stakeholders to satisfy this demand over the period and critically assess the past and present constraints and achievements of the programmes and propose the way forward.

Introduction:

Since early 1960s, training of African statisticians has been taking place within and outside the continent with the aim of satisfying the demand for human resources. Many statistical training institutions have been set up in various countries to achieve this aim. Meanwhile, this demand has been expanding. The purpose of this paper is to assess whether this demand has been satisfied for statistical personnel in the region.

Historical perspective:

Following a recommendation of the Second Conference of African Statisticians held in 1961 a programme for middle-level (diploma) and professional level training in statistics was started in early 1960s. By the end of 1970s, many statistical training centres had been established, namely Institut africain et mauricien de statistique et d'économie appliqué (IAMSEA) in Kigali, Centre européen de formation des statisticiens-économistes des pays en développement (CESD) in Paris, Institut national de statistique et d'économie appliqué (INSEA) in Rabat, Institut sous-régional de statistique et d'économie appliqué (ISSEA) in Yaounde, Ecole Nationale Supérieure de statistique et d'économie appliqué (ENSEA) in Abidjan, Institut national de la planification et de la statistique (INPS) in Algeria, Institut de Formation et de Recherche démographiques (IFORD) in Yaounde and Collège statistique de Dakar (CS) in Dakar, all serving the Francophone countries in Africa. In the English speaking Africa the STCs set up by end of 1970s included Eastern Africa Statistical Training Centre (EASTC) in Dar-es-Salaam, Institute of Statistics and Applied Economics (ISAE) at Makerere University in Kampala, Department of Statistics at University of Ibadan, Nigeria, Department of Statistics and Institute of Statistical, Social and Economic Research (ISSER) at University of Ghana in Legon, Department of Statistics at University of Botswana in Gaborone, Department of Statistics at University of Dar-es-Salaam in Tanzania, Department of Statistics at the National University of Lesotho, Maseru, Department of Statistics at the University of Addis Ababa in Ethiopia and Department of Statistics at the University of Swaziland.

Some of these STCs were selected by ECA for support under the Statistical Training Programme for Africa (STPA) which started in 1978 and ended in 1993. The programme had the aim of ensuring that Africa had a permanent supply of qualified staff for the national statistical system including the public and private sectors. The activities of STPA included the preparation of teaching syllabuses, training of

trainers, provision of short-term visiting lecturers, supply of teaching materials and training of those currently employed by the statistical offices. As a result many Africans were trained and joined national statistical offices which were not able to retain most of them due to unattractive and uncompetitive salaries NSOs offered.

Since early 1990s when the STPA ended, many other university statistics departments in several countries of Africa have been set up as centres for training statistical personnel. For instance many Nigerian universities have established departments of statistics or mathematics that are currently teaching the subject. Similar situation has taken place in Kenya, Tanzania and Uganda.

Current Status

Recently, there have been initiatives to revive the ideas of STPA. The creation of the African Statistics Centre (ASC) several years ago as part of UNECA to replace what the Statistics Division was doing in 1970s and 1980s has given an impetus to the idea of reviving STPA. Since its creation, the ASC has coordinated statistical development activities, including training of statisticians in Africa. The African Group on Statistical Training and Human Resources (AGROST) was created in June 2009 to promote statistics training in Africa. One of the major collaborators in training has been African Development Bank (AfDB), which has funded several projects that have trained statisticians in areas like National Accounts and Consumer Price Indices (CPI) under the International Comparison Program which AfDB coordinates for Africa. Other development partners in training African statisticians have included Statistics South Africa which has championed the young African statistician project, the Partnership in Statistics for Development in the 21st Century (PARIS) and Internationale Weiterbildung und Entwicklung (In-Went) of Germany. These development partners have been holding meetings with leading STCs and NSOs to plan a way forward.

Achievements

Statistical training in Africa has been successful in several ways. First, several STCs have trained many statisticians who are currently manning and leading various NSOs. For instance, in the last one decade the former ISAE (currently known as the School of Statistics and Applied Economics) of Makerere University has increased its graduates almost 3 times from 187 in 2002/2003 academic year to 515 in 2009/10 and some of its past graduates are currently leading the Uganda Bureau of Statistics, reputed to be one of the best in Africa. Other graduates are in other sectors, such as tax collection agencies, ministries, non-government organizations and the private sector. Similarly, other regional STCs including EASTC in Tanzania, ISSEA in Cote d'ivoire, INSAE in Rabat in Morocco, University of Ibadan and the Federal School of Statistics, Nigeria have continuously produced graduates that have helped NSOs in their home countries perform well. Even for NSOs in non-host countries, these STCs have done well to train statisticians of their catchment areas, despite critical lack of funds to train them.

Secondly, many universities in the region have established departments of statistics to help train statisticians for their countries. Universities in Kenya, Botswana, Lesotho, Swaziland, Ethiopia, Egypt, Senegal, Tanzania, Zambia and Zimbabwe have established departments of statistics to supplement and complement the regional STCs training of statisticians for their home countries. These universities have partially solved the limitation of funding of their country personnel to study at regional STCs. Despite the constraints of not following the hands-on training programme found at STCs, these universities have increased many competent personnel in statistics at NSOs.

Thirdly, a significant achievement of the STCs has been that many women have been trained as statisticians. As more girls do mathematics at secondary schools, more statistical centres have been

admitting increasing numbers of women into their programmes and graduating more. For instance, with more degree programmes that are related to and including many courses of statistics, such as bachelor of statistics and bachelor of science in quantitative economics, business statistics, actuarial science, statistics and mathematics, statistics and economics and population studies, ISAE at Makerere has experienced an upsurge of numbers in both their admission and graduation lists. It is no longer the lone girl who graduated in 1970/71 in my pioneering group, or few girls who graduated from 1972 to early 1990s but equal or even greater numbers of girls than boys in some areas. Out of 515 graduates of ISAE at the end of 2009/10 academic year, 224 (43.5%) increased from 29.9% for 2002/03. Although the ideal would have been 50%, this continuing improvement in gender balance is good for both gender equality and general development of the region. In fact, the women graduates in Population Studies of 2009/10 academic year were more than three fifth (61.8%) of all graduates.

Another positive development for statistics is that with more graduates of statisticians or those who combined statistics and another subject, many of these graduates have sought employment in many sectors of the economy. In Uganda, where more than five hundred graduates in statistics and related subjects come out of the universities every year, most of these graduates do not get jobs in mainstream statistics agencies and they have ended up in other areas of employment, such as accounting and auditing firms, tax authority agencies, the private sector such as banks, NGOs and international organizations offices in the country. This has increased the visibility of statisticians and their usefulness outside the NSOs and related offices, which is a great achievement of the STCs that have come up with innovative programmes to produce them. It is hoped that as more statisticians work in more non-statistical agencies, they would influence the planning and decision making policies of many countries of the region by insisting on evidence based development plans and policies.

Challenges:

Statistical training has had several challenges. Perhaps the most prominent of the challenges is inadequate funding of STCs. At the beginning, the funding of the regional STCs was mostly from the development partners, such as the UN agencies and EU and bilateral partners. The expectation of the development partners was that the regional African governments would take over the funding and sustain the centres. Unfortunately, when time came for the African governments to take over, it did not happen to the extent that some STCs closed down until the development partners returned to bail out the STCs. This was because the African governments were too poor to fund STCs, but also these governments did not consider the STCs as of high priority and hence did not budget for them. It was left to the host governments to find funding either from their national budgets or by appealing to their donors to help.

Secondly, the civil conflicts in many countries in the region have adversely affected the training of statisticians. Persistent civil conflicts in Uganda for close to two decades scarred some students from the region from participating in the training programmes at ISAE, Kampala. Several planned projects like expansion of infrastructural facilities for ISAE were stalled due to insecurity in the country, since development partners feared investing in insecure country. The same story has happened at INSEA, Abidjan in the last decade of civil unrest and hence uncertainty in Cote d'ivoire, which has left the training centre with many problems. In addition, the war in Rwanda in early 1990s saw the regional STC in the country (IAMSEA) turned into an army barracks and later something else, but not STC.

The third challenge is slow coping of STCs to the rapidly increasing population of African countries. The increase in population came with the demand for STCs to expand their facilities to train more statisticians for the region. This demand included statistical personnel to work in NSOs to conduct, process and analyse frequent censuses and surveys. Also many sectors of the economy, like tax authorities and banking sector needed statisticians to help them. Unfortunately, given the limited facilities at STCs, this demand could not be met adequately.

Fourthly, in mid 1990s the new management of UNECA restructured and abolished the statistical and demographic divisions and merged them with other divisions. These statistical and demographic divisions had through 1970s and 1980s been critical in coordinating and supporting the statistical training in Africa. When they were no more, the regular meetings of African statistics directors and STC directors were no more and hence there was no remaining African institution to advocate for statistical training.

Fifthly, STCs have the challenge of harmonizing and standardizing their programmes. In 1980s, training programmes at the regional STCs were jointly developed to ensure that all centres taught similar courses. Since the end of STPA programme, STCs have been using training programmes which were not discussed regionally and hence not harmonised and standardized for African interests.

Furthermore, the current STCs are not coping with the demands of the recently independent countries. South Africa which joined other African countries as independent in 1990s has come with demands that cannot be immediately met by STCs. The country has the resources to fund thousands of students at STCs in order to build its NSO capacity. However, because of the apartheid policies the country did not have many candidates that were trained in mathematics at high school to be able to cope with the rigours of statistics degree programme at STCs. Secondly, even with the crash programme in various schools to get many high school graduates with mathematics, the matric type of education system in South Africa is one year short of the requirement of A level mathematics to qualify for admission to ISAE. STCs in the region have so far not come up with a solution to this problem.

Critical Inadequacy of specialized statisticians on the continent is another challenge. Due to their inadequate training schools on the continent, only general, statistical computing and demographic statisticians are being trained in sufficient numbers. There is a critical lack of specialized statisticians to plan and conduct surveys and censuses in the agricultural sector, and collect and analyze environmental situation, biological and medical data, economic information and national accounts. Fifty years after setting up the first statistical school, Africa is continuing to use non-nationals as agricultural statisticians, economic statisticians, environmental statisticians, biostatisticians/medical statisticians and national accounts specialists. Even technical demographers are currently not enough to meet the demands of planning and conducting population censuses and surveys, despite several departments of demography/population studies in the region.

Lastly, Africa has experienced the brain drain of statisticians. As statistical training centres train statistical personnel, the highly trained statisticians leave their countries and the regions for better opportunities abroad. This is created by the mostly poor incentives offered to the statisticians to stay and work for their countries. The civil conflicts in African countries also have forced the statisticians to look for jobs outside their countries for security reasons and once settled they find it difficult to return home.

Conclusion:

It is evident from above that the programme of training statistical personnel for Africa met a lot of successes. However, there are still many challenges to be overcome in order to achieve most of the original objectives of satisfying all the needs for socioeconomic development of the region.

Way Forward:

In order for statistics development and training to succeed in the region, it is important to emphasise that funding must be available for the activities leading to this. If this development is to be owned by Africa, national governments need to make statistics in general and statistical training in particular a priority in the budgeting process. This means real commitment by allocating funds in the budgets to start, revive, facilitate and develop statistical training centres. As Ugandan example has demonstrated there are many jobs out there that those trained in statistics can do well; and hence every country in the region while using the existing STCs, should plan to have their own training centres to produce the future statistical personnel. This implies that African national universities should set up statistics departments and start training statistical personnel from the undergraduate certificate to postgraduate degrees.

Secondly, the example of South Africa of joining the development partners as friends of statistics and helping in African statistical development including training of young African statisticians should be followed by other rich African countries. Nigeria, Egypt, and several mineral rich countries should join hands with development partners from outside the region to help poor or underdeveloped African states to train statisticians.

Thirdly, African governments should work in subregional groups and support one subregional STC. The selected subregional STC should be supported financially with limited specific objectives. One of such objectives should be to help the national governments in establishing their own national STCs, which will start slowly to train national statistical personnel. The second specific objective is to continue using the subregional STC to train those statistical personnel their national centres are not yet capable of training. For instance, if the national STCs start with training at undergraduate certificate and diplomas, the subregional STCs can be training the undergraduate and postgraduate degrees, some of whom can be used later as trainers in the national centres.

In the medium term, national governments should pull their meagre resources to support the current STCs which have substantial facilities and personnel to become centres of excellence for subregions. These subregional STCs should then be used by national governments to train their statistical personnel in specialised fields of statistics, such as agricultural, economic, demographic and medical statistics/biostatistics and national accounts. In the long run the nationals trained at these centres can then be trainers at their upcoming national STCs. The same trained specialists can be used in leading national statistical projects.

STCs should start using innovative ways of increasing enrolment and graduates. For instance, modular form of courses should be introduced at STCs in order to make it easier for various possible collaborators in training, such as those from NSOs and other training institutions to help by offering to teach those courses not offered by the STC lecturers. Secondly, STCs should embrace and use e-learning approach to train as many people as possible at one time by using a few lecturers and high

speed electronic networks and multi-media technologies, nationally, regionally and even internationally.

Another innovation that may help in enhancing the quality of statistics graduates is for all STCs to introduce internships, workshops, field attachment and research projects as compulsory components of their programmes. For several decades ISAE of Makerere and several former STPA centres have implemented the STPA recommendations of utilizing the holidays between semesters/terms to conduct hands-on workshops of several weeks to professional statistics students with the purpose of covering some of the practically oriented courses, such as statistical computing and socio-economic surveys. Also, the students conducted field research, processed their data, analysed and wrote it up in reports that contributed to the grading of their degrees. These two activities have added more skills to the graduates of these institutions and made them more competitive in the cut throat employment market. All the STCs should compel their students to go through similar workshops and research.

A related innovation that may help the statistics graduates to be more marketable is the need to introduce internships and field attachment. These components of programmes would make the students to be exposed to brief but useful hands-on experience in work places, which train them to know what happens there and hence be prepared for, instead of being shocked into work situations. By luck the contact of students with the prospective employers could be used by the former to return and be employed if they impressed their employers. Such experience, however brief, can improve the curriculum vitae of graduating students, while looking for jobs.

Finally, there is need for a guide syllabus for all STCs. With many university statistics departments in existence and others coming up, it would be critical for regional and national statistics agencies, especially the Africa Statistics Centre at UNECA and national statistics associations to try and ensure that standards at these STCs are fairly uniform. To do that the Africa Statistics Centre should emulate what the former statistics division of UNECA used to do. The division used to hire experts in training statistical personnel at various levels to propose guide syllabuses for the certificate, diploma and degree/professional training in statistics. These syllabuses were discussed and agreed by stakeholders including STCs and NSOs and strongly recommended to all STCs to adapt for their conditions. The syllabuses were revised regularly to keep abreast of new innovations and technology. Unfortunately, even the programmes of former STPA, which used to be fairly uniform are no longer being used by STCs, because of the non-existence of updated guide syllabus jointly agreed in the region. This activity can be revived by the Africa Statistics Centre, NSOs and STCs to help improve the standards of training the subject in various countries in the region.

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