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Miscellanea

Under the heading Miscellanea, essays will be published dealing with topics considered to be of general interest to the readers. All contributions will be refereed for their compatibility with this criterion.

Training of African Statisticians at a Professional Level[1]

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Abstract: The training of African statisticians started over three decades ago in an intensive programme to overcome staff shortages in statistical offices. Centres for this training were established initially in Francophone Africa in the early 1960s followed by those in the Anglophone Africa in the late 1960s and 1970s. To ensure a continuous supply of qualified personnel for the central statistical offices, the United Nations Economic Commission for Africa created the Statistical Training Programme for Africa (STPA) with training centres in 1978. An evaluation of this programme shows that the centres have contributed a great deal to the realisation of the STPA objectives, especially in Francophone Africa.

1. Introduction

During the past three decades, Africa used various programmes to train statistical personnel to work in government and private statistical organisations. Unfortunately, Africa still suffers from a lack of good general statistics, largely because of a shortage of adequately trained and experienced statistical personnel in the national statistical offices.

This paper reviews the training of African professional statisticians. It also examines problems related to the training centres and makes recommendations for improvements.

2. History of Training an African Statistician

Before independence, most African statisticians were trained in Europe, especially in the United Kingdom and France. A handful of these local statisticians assisted in the 1960 round of censuses and surveys under the supervision of the European staff.

In the immediate post-independence

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period, the 1961 Second Conference of African Statisticians recommended an intensive programme to overcome staff shortages in African statistical offices (UNECA 1978). Although emphasis was initially placed on middle-level training, professional training gradually developed. For instance, in 1961 l'Institut National de statistique et d'économie appliquée (INSEA) was established in Rabat, Morocco, for training professional statisticians in Francophone Africa. In 1962 Francophone Africans attended the Centre Européan de Formation des statisticiens economistes des pays en développement (CESD) in Paris, and l'école Nationale superieure de statistique et d'économie appliquée (ENSEA) was established in Abidjan, Côte d'Ivoire in 1967.

Later, l'Institut sous-regional de statistique et d'économie appliquée (ISSEA), Yaounde, Cameroon and l'Institut Africain et Mauricien de statistique et d'économie appliquée (IAMSEA), Kigali, Rwanda were both established in 1976, while l'Institut de Formation et de Recherche Demographique (IFORD), Yaounde, Cameroon; l'Institut National de la planification et de la statistique (INPS), Algiers, Algeria; and Collège Statistique (CS), Dakar, Senegal were created in 1972, 1970, and 1975, respectively.

However, it was not until 1969 that the first regional professional statistical training centre for English-speaking Africa was established at Makerere University, Kampala, Uganda. The establishment of the Institute of Statistics and Applied Economics (ISAE) followed a recommendation by the United Nations Expert Group on the Education and Training of Statisticians in Africa to the Secretary General that the UN should assist in providing facilities for training statisticians in Anglophone Africa. The recommendation was endorsed by the Conference of Statisticians in Addis Ababa in 1967 (ISAE 1990). However, at the time the ISAE was created, there were some national institutions in Anglophone Africa teaching statistics as a university subject. These included the Institute of Statistical, Social and Economic Research (ISSER) at Legon University, Ghana, established in 1962; the statistical units in the Departments of Economics and Mathematics, Ibadan University which has been awarding a professional diploma in statistics since 1965; Institute of Statistical Studies and Research, Cairo University, founded in 1962; Department of Statistics, Cairo University, created in 1960; Department of Statistics (formerly Statistical Training Centre), Addis Ababa, established in 1966; and the Department of Statistics, University of Dar-es-Salaam, Tanzania, was established in 1967.

Although these Anglophone centres were created as African institutions, they were largely staffed by academics from the former colonial countries. These academics continued to use a syllabus based on the traditional British university system. Under this system, a candidate studied three subjects in the first year and continued with two subjects, including statistics, in the last two years. A change from this system did not take place until 1975 when the Institute of Statistics and Applied Economics (ISAE) decided to introduce a Bachelor of Statistics to meet regional needs.

The three-year Bachelor of Statistics programme with four academic terms in the first and second years (instead of the traditional three terms per year) put greater emphasis on applied statistics and actual field work, in addition to the regular Bachelor of Science degree courses in statistics, economics, and mathematics.

In addition, the Department of Statistics in the University College of Botswana, Lesotho and Swaziland (UCBLS) started

teaching statistics in 1973. Following the break-up of the University of Botswana, Lesotho and Swaziland (UBLS) into three national universities in 1976, each university established a statistics department for training professionals in statistics.

Furthermore, in 1972 the United Nations and the government of Ghana created the Regional Institute for Population Studies (RIPS) at the University of Ghana, Legon. One of the main objectives of RIPS was to train demographers for English-speaking Africa.

Despite these efforts, the African demand for statisticians continued to increase. This finding was reflected in the report of the evaluation exercise of the African Statistical Training Programme (UNECA 1977). The evaluation was based on returns of questionnaires sent out by the ECA's statistics division to national statistical offices on the continent. Table 1 summarises the results of this survey for all African independent countries except Egypt. It is clear from the table that a large gap existed between the number of working statisticians in 1977 and the projected requirements for the following ten years up to 1987 in all countries. In almost all of the countries, the demand for statisticians between 1978 and 1987 was several times the number of the total statistical staff in 1977. This was due to greatly expanded services on the continent. An extreme case of this expansion was Nigeria which required an additional 900 statisticians because of the decision to start statistical offices in each of the many states created in the mid-1970s, and in each ministry of the central and state government as well as to expand the central statistical office. As a result of the report (UNECA 1978), the Statistical Training Programme for Africa (STPA) was set up in 1978.

3. Statistical Training Programme for Africa (STPA) Centres

The primary objective of the STPA was to ensure that Africa had a permanent supply of qualified statistical staff for the Central Statistical Offices (CSOs), other government agencies, and the private sector. A ten-year programme was set up by the United Nations Economic Commission for Africa (UNECA) with the assistance of various donors to enable STPA to attain its objective of self-sufficiency. This was to be achieved by increasing the number of trained statisticians and improving and maintaining the quality of the current statistical staff. It was envisaged that during the 1978–87 period, the STPA centres would increase their output by 50%, with greater increases in the professional training of the Anglophone centres. In addition, a special project for training professional statisticians in the Portuguese-speaking African countries was to be implemented. Hence, the centres were to aim at improving their efficiency and output, make their training programmes more practical, and ensure self-sufficiency.

Furthermore, the top priority of STPA was to produce professional statisticians. Such programmes aimed at offering a basic university training leading to one of the following degrees (diplomas): ingénieur des travaux statistiques, ingénieur d'application de la statistique for the Francophone countries and first degree in statistics: Bachelor of Arts, Bachelor of Science, Bachelor of Statistics or equivalent qualification for the English-speaking areas.

Related to the professional statistical training were the more specialised courses offered to the statisticians at the post-graduate level. These scholars would then become specialists in various fields, such as, national accounts, agricultural statistics, sample surveys, demographic statistics,

Table 1. Summary of working professional statistical staff in 1977 and the requirements for 1978–87

1978–87	Staff in post 1977				Requirements		
Country	CSO	Other Govt	Other Sectors	Total	CSO	Other Govt and Private Sector	Total
North Africa:							
Algeria	17	3	19	39	320	170	490
Libya Arab Jamahiriya	11	8	3	22	45	20	65
Morocco	50	52	87	189	350	200	550
Sudan	58	10	10	78	50	20	70
Tunisia	42	8	34	84	230	130	360
West Africa:							
Benin	8	1	9	18	37	11	48
Cape Verde	2	NS	NS	2	15	NS	15
Gambia	3	NS	3	6	20	5	25
Ghana	23	5	12	40	245	130	375
Guinea	3	NS	6	9	60	10	70
Guinea Bissau	NS	NS	NS	NS	15	5	20
Ivory Coast	9	12	25	46	68	20	88
Liberia	16	5	1	22	22	10	32
Mali	20	22	32	74	42	13	55
Mauritania	7	NS	2	9	18	5	23
Niger	8	1	NS	9	28	9	37
Nigeria	86	32	20	138	800	100	900
Senegal	14	8	19	41	68	20	88
Sierra Leone	14	NS	2	16	16	10	26
Togo	24	3	9	36	39	12	51
Upper Volta	7	1	8	16	42	14	56
Central Africa:							
Angola	3	NS	5	8	25	10	35
Burundi	3	1	NS	4	29	9	38
Cameroon Un. Rep.	31	21	24	76	122	38	160
Central African Republic	5	2	2	9	34	10	44
Chad	3	NS	NS	3	56	14	70
Congo	7	5	4	16	42	13	55
Equatorial Guinea	NS	NS	NS	NS	6	5	11
Gabon	7	1	2	10	29	9	38
Rwanda	1	4	NS	5	33	10	43
Sao Tome & Principe	NS	NS	NS	NS	8	5	13
Zaire	34	14	1	49	100	21	121

Table 1. (Continued)

1978–87	Staff in post 1977				Requirements		
Country	CSO	Other Govt	Other Sectors	Total	CSO	Other Govt and Private Sector	Total
East Africa:							
Botswana	11	NS	NS	11	42	10	52
Comoros	NS	NS	NS	NS	15	5	20
Djibouti	1	2	NS	3	8	5	13
Ethiopia	24	26	12	62	48	10	58
Kenya	23	NS	6	29	136	30	166
Lesotho	12	1	NS	13	51	10	61
Madagascar	28	11	26	65	62	19	81
Malawi	16	3	NS	19	28	5	33
Mauritius	9	6	7	22	38	5	43
Mozambique	4	NS	5	9	30	10	40
Seychelles	3	NS	NS	3	1	5	6
Somalia	9	3	1	13	21	5	26
Swaziland	7	1	2	10	26	5	31
Tanzania	30	4	4	38	121	20	141
Uganda	17	16	34	67	96	20	116
Zambia	23	8	5	36	100	30	130
Total	**733**	**300**	**441**	**1447**	**3837**	**1252**	**5089**

Excluded are: Egypt, Namibia, Reunion, South Africa, Zimbabwe and Western Sahara.
Source: UNECA (1978).
NS – Not stated but most likely means none.

economic statistics, labour force statistics, social statistics and statistical computing. These programmes would lead to qualifications, such as certificat d'études supérieures spécialisées, graduate diplomas in statistics, and Masters and Doctorate degrees. In addition, short term courses, workshops, and seminars were to be organized for working statisticians by the local STPA centres or foreign institutions.

At its inception, STPA had twelve full members (eleven of which were involved in professional training) and one associate member (Munich Centre for Advanced Training in Applied Statistics for Developing Countries – CDG). The eleven centres are listed in Table 2. They were chosen because they were regional (servicing several countries) and offered practical courses in statistics. As the table shows, the total annual output of the twelve centres increased from 492 professionals in 1977 to 690 in 1978–82. The role of the associate centres was to organize training courses, such as seminars, specialized courses and workshops in accordance with African needs.

Furthermore, the STPA activities were to assist other institutions involved in teaching statistics especially in Anglophone Africa. The aim was to encourage these centres to supplement the STPA efforts in meeting the demands for statisticians.

Table 2. Actual 1977 number of graduates and recommended annual number from STPA centres at professional level for the period 1978-82 (including Associate Centre)

Name of the Centre	Intake in 1977/78	Recommended annual intake 1978–82 (a)	Average intake for 1985/86, 1986/87, 1987/88, 1988/89 (b)
UBS (Botswana)	2	20	19
NUL (Lesotho)	55	80	NS
University of Ibadan (Nigeria)	30	80	42[2]
ISAE (Uganda)	60	80	96[2]
ISPEA (ISSEA) (Cameroon)	25	40	19[3]
ENSEA (Cote d'Ivoire)	20	30	18
ITPA (INPS) (Algeria)	65	65	NS
INSEA (Morocco)	100	160	107[3]
IAMSEA (Rwanda)	30	30	30
CESD (France)	25	25	19[4]
CDC (Munich)[1]	80	80	33
Total	**492**	**690**	–

[1]Short term specialized training.
[2]B. Stat, B.Sc., Dip. Stat., M. Stat., M.A., and Ph.D.
[3]Average of 1985/86, 1986/87 and 1987/88.
[4]Graduates in ISE, most likely intake was higher.
Source: (a) UNECA (1977).
(b) UNECA (1989a).
NS – Not stated.

4. Contribution of STPA Centres and Non-STPA Institutions

Several evaluation exercises by UNECA have shown that STPA centres have achieved success in training African statisticians. For instance, an evaluation of STPA in 1985 based on a survey of 33 African countries gives an indication of the achievements of the centres in the first seven years (1978–84). Table 3 shows that an extremely high percentage (96%) of the original requirements for professional statisticians had been satisfied by the French-speaking centres excluding INSEA, Rabat. The Rabat Centre achieved 169% of the original needs which was exceptional. In contrast the achievement of the English-speaking centres was only moderate (66%) (UNECA 1985). In fact, as discussed below, the percentage shown by the table for the Anglophone centres was much higher than was actually achieved because of the existence of the large number of non-STPA centres in the countries served.

However, due to increased demand for more professional statisticians, the original needs had changed seven years later. Table 3 also shows that the 1978 needs for Anglophone Africa had increased dramatically by 69%. This could not be met by a slight increase of 12 percentage points in the output of the English-speaking centres. On the other hand, the gap between the increased demand (22%) and increased output (18%) for the French-speaking centres excluding INSEA was small. The table shows that the Francophone centres performed much better than the Anglophone institutions.

Table 3. Original needs for professional statisticians, graduates of STPA centres, increases in the original needs and increases in the planned number of graduates 1978–84

Language groups	Original needs to be met by STPA centres	Output of STPA centres
English-speaking centres	1431	951
French-speaking centres	1505	1843
French-speaking centres excluding INSEA, Rabat	966	930
INSEA, Rabat	539	913
All STPA centres	2936	2794
All STPA centres excluding INSEA, Rabat	2397	1881

Language groups	Percentage needs met	Increases in original need (%)	Increases in the outputs (%)
English-speaking centres	66	69	12
French-speaking centres	122	37	68
French-speaking centres excluding INSEA, Rabat	96	22	18
INSEA, Rabat	169	NS	NS
All STPA centres	95	51	44
All STPA centres excluding INSEA, Rabat	78	46	15

Source: UNECA (1985). NS – Not stated.

Notwithstanding this difference in performance between the two major language groups, the English-speaking areas were also served by the associate members of STPA and non-STPA African institutions whose output is excluded from Table 3. By 1989, the STPA associate members were CDG (Munich), the Institute of Social Studies (ISS), the Netherlands, Applied Statistics Research Unit (ASRU), University of Kent, U.K., the Institute of Development Studies (IDS), University of Sussex, U.K., Division of Statistics and Industrial Statistics Research Unit, University of Newcastle upon Tyne, U.K., Department of Statistics, University of Sheffield, U.K., and International Statistical Program Centre, Bureau of Census, U.S.A. For a period of three to four years around mid 1980s, these centres graduated close to 500 Africans, most of whom were from the Anglophone Africa (UNECA 1989a).

In addition, 12 of the 19 non-members of STPA centres in Africa are involved in professional statistical training for English-speaking Africa. The individual centres' output for 1985/86 listed in Table 4 totals to 275 Bachelor of Science holders, 77 Postgraduate Diplomas, 34 Masters of Science, and 9 Doctorates (UNECA 1989b). These figures show the substantial contribution of the non-STPA centres to the Anglophone professional statistical training. In contrast, none of the current non-STPA centres in French-speaking Africa trains statisticians at a professional level.

Another survey of statistical organization and staffing was conducted in 1987. This

Table 4. Graduates of the Statistical Training Centres not participating in STPA in 1985/86 academic year

Centre		Type of certificate	Output
1.	ISSR (Cairo), Egypt	Postgraduate Diploma (Stat)	77
2.	Dept. of Statistics (Cairo), Egypt	B.Sc. (Stat)	37
3.	Cairo Demographic Centre, Egypt	Certificate	NS
		Special Diploma	NS
		M. Phil	NS
		Ph.D.	NS
4.	Dept. of Statistics, Addis Ababa, Ethiopia	B.Sc. (Stat)	51
		M.Sc. (Stat)	8
5.	Mathematics Dept. (Stat division), Kenya	B.Sc.	60
		M.Sc.	10
		Ph.D.	5
6.	Dept. of Statistics, Ilorin, Nigeria	B.Sc. (Stat)	20
		M.Sc. (Stat)	3
7.	Dept. of Statistics, Nsukka, Nigeria	B.Sc.	26
		M.Sc. (Stat)	2
8.	Dept. of Demography and Social Statistics, Awolowo, Nigeria	B.Sc. (Soc. Science)	36
		M.Sc. (Dem. and Soc. Stat)	4
		Ph.D. (Dem. and Soc. Stat)	1
9.	Dept. of Applied Stat and Demography, Anambra, Nigeria	B.Sc.	9
10.	Dept. of Maths, Tafawa Balewa College, Nigeria	B.Sc.	NS
11.	Dept. of Statistics, Swaziland	B.Sc.	NS
12.	Dept. of Statistics, Dar-es-Salaam, Tanzania	B.A./B.Sc.	36
		M.A. (Stat)	1
	Subtotals	B.Sc.	275
		Postgraduate Diploma	77
		M.Sc.	34
		Ph.D.	9
	Total		**395**

Source: UNECA (1989b).
NS – Not stated.

survey focused on 23 national statistical organizations and showed that the number of professional statisticians increased substantially in the central statistical offices (CSO), ministries, and other sectors of the economies (UNECA 1988). Unfortunately, I could not get enough information about this survey to make any comparisons.

However, the last column of Table 2 shows the average annual acceptance of candidates for professional and postgraduate studies at most of the STPA centres for 1985–1988. Comparing the initial recommended acceptance levels and the realized figures, it can be seen that ISAE surpassed the target while IAMSEA equalled it and UBS, INSEA and CESD were close. In addition, Ibadan, ENSEA and ISSEA satisfied about half of the recommendation.

Another contribution of STPA centres to the training of African statisticians is to ensure standard syllabus and program quality. In the course of the ten years, STPA centres in collaboration with UNECA have

developed a "Guide Syllabus for Professional Level Statistical Training." Before this syllabus, there was a wide variation among teaching programmes implemented by various institutions in STPA, leading to graduates with divergent theoretical knowledge, background, and practical experience.

The primary aim of establishing a guide syllabus for professional statistical training was threefold (UNECA 1986). First, each languge group would be provided with a guide syllabus which would assist in the integration of statistics and practical courses. Secondly, the syllabus would bridge the gap between the English and French systems. Thirdly, the guide syllabus would assist non-STPA centres in Africa offering statistical training as well as employers of the graduates of such training centres.

The guide syllabus recommended statistics, mathematics, and economics be taught in the first and second years. In the third year a candidate should choose freely from applied statistics courses. Practical exercises in statistics, economics, and mathematics were recommended as an integral part of the three-year programme. In addition, field work in the form of a survey and research project leading to a report were considered essentials of the professional degree. Apart from describing topics to be taught in the programme, the guide syllabus gives a list of basic textbooks to be used by teachers and students.

Furthermore, to increase communication between the Francophone and Anglophone professionals, it was recommended that French language be taught at English-speaking centres while English forms a part of the French-speaking syllabus. Also, sociology was recommended to statisticians to enable them to understand society better. Already most STPA centres have revised their syllabuses to incorporate these guidelines.

The initial objectives of STPA encouraged the STPA centres to run postgraduate programmes as a way of developing STPA centre staff and providing CSOs with specialists to lead various sections of statistics. The postgraduate programmes included postgraduate diplomas in statistics, Ingénieurs statisticiens-économists, Diplôme d'études approfondies, Masters of Science, Masters of Statistics, M.A. (Population Studies/Demography), certificat d'études supérieures spécialisées, Diplôme d'études démographiques, and Masters of Philosophy and Doctorate degrees.

However, with the exception of RIPS, by the end of the ten-year programme in 1987 only a handful of postgraduate students had graduated from the STPA Anglophone centres (see Table 5). The situation in the French-speaking areas was better with IFORD and CESD awarding many degrees, although the qualifications awarded were limited to postgraduate diplomas. There was hardly any graduate with a qualification equivalent to Masters and above in the Francophone centres. This is in contrast to an annual total of about ten graduates with Masters and Doctorates from the English speaking centres, from 1985 to 1988.

A related activity at STPA centres was research. It was originally envisaged that research activities at STPA centres would grow with the development of professional and specialized training programmes. But due to inadequate postgraduate training, shortage of teaching staff and lack of funds to purchase research equipment, the centres' research programmes were below expectation. Most of the research was theoretical since applied statistical research required equipment (UNECA 1988). Unfortunately, lack of research activities and publications at STPA centres negated the successes achieved in the teaching programmes.

Another shortcoming of STPA is the failure to implement a special project for

Table 5. Annual graduates of STPA centres by sex from 1985/86 to 1987/88 academic years

Centre	Degree/Diploma type	1985/86		1986/87		1987/88	
		M	F	M	F	M	F
1. Dept. of Statistics, Botswana	B.A. (Stat)	7	3	8	12	11	10
2. RIPS, Legon, Ghana	M.A. (Pop. Studies)	30	5	28	4	25	5
3. ISSER and Dept. of Stat., Legon	B.A./B.Sc.	26	2	23	1	40	0
	M.A./Postgrad. Diploma	NS	NS	1	NS	NS	NS
4. Dept. of Statistics, NUL, Lesotho		NS	NS	NS	NS	NS	NS
5. Dept. of Statistics, Ibadan	B.Sc.	9	1	20	3	6	1
	Postgraduate Diploma	3	1	1	NS	6	2
	M.Sc.	8	NS	10	1	7	NS
	M.Phil/Ph.D.	1	NS	NS	NS	2	NS
6. ISAE, Makerere, Uganda	B.Sc.	27	3	33	1	46	3
	B. Stat.	40	3	42	3	43	5
	Dip. Stat.	5	0	8	1	0	0
7. INPS, Algeria	IAS	NS	NS	NS	NS	NS	NS
8. IFORD	Diplome d'etudes Demographiques (DED)	12	1	16	1	0	0
9. ISSEA, Yaounde	IAS	21	1	18	2	22	0
10. ENSEA, Abidjan	ITS	13	0	17	2	17	1
	ISE (Postgrad. Diploma)	–	–	–	–	8	0
11. CESD, Paris, France	ISE (Postgrad. Diploma)	18[1]		27[1]		12[1]	
12. INSEA, Rabat, Morocco	ISE (Postgrad. Diploma)	8	NS	9	NS	6	3
	IAS	NS	NS	22	10	33	14
13. IAMSEA, Kigali, Rwanda	IAS	30	0	24	1	29	1
14. CS, Dakar, Senegal	ITS	0	0	22	1	0	0

Source: UNECA (1989a).
NS – Not stated, most likely zero.
[1]both sexes.

training Portuguese-speaking statisticians. Professional training was not available until October 1989 when CESD-Lisbon was inaugurated. CESD-Lisbon will train Portuguese-speaking Africans at professional and postgraduate levels. Due to the protracted start-up, there are very few Portuguese-speaking African statisticians to work in Portuguese-speaking CSOs.

A further limitation of the STPA has been the failure to train adequate numbers of women at the professional level. The few women admitted to do undergraduate and graduate statistics at ISAE Makerere University have performed very well. For example, in the last 10 years women have topped the final year class four times, three times getting "First Class" degrees. However, only a handful of women have qualified for admission to professional training programmes at STPA centres, resulting in extremely low numbers of women statisticians (see Table 5). As one STPA Centre Director reported, women tend to believe that mathematics is too hard for them and hence are discouraged from succeeding in mathematics in primary and secondary schools (UNDP 1990). Without a strong background in school mathematics women are not eligible for admission to do statistics at universities.

5. Problems of STPA

According to a UNECA report (1989), there are several main problems troubling STPA centres. First, the number of scholarships available to candidates admitted to STPA is inadequate. Frequently, candidates have been admitted to STPA centres but could not attend for lack of scholarships. The 1984 "Joint Conference of African Planners, Statisticians and Demographers" blamed their governments for not ensuring that adequate scholarships were earmarked for statistical training. This is often due to the low priority assigned statistical training by the African governments. This arises from the statisticians' failure to influence policy-makers on the allocation of the scholarships. Also lack of foreign currency for most African countries to sponsor their candidates outside their boundaries has resulted in some STPA centres training mostly nationals of the host countries. For instance, ISAE has recently been training an increasing number of Ugandans for lack of scholarships to those admitted from Kenya, Tanzania and Zambia.

The second problem has been the limited intake capacity of the STPA centres. Athough some Anglophone centres have experienced lack of adequate physical facilities, it is the Francophone institutions that have been hardest hit by the problem. This is because, unlike the Anglophone, the Francophone centres are not based in regular university campuses and hence cannot take advantage of the existing physical facilities at universities. The regionalisation of the centres has made the problem more difficult to solve as the host countries do not have full responsibility and financial means of providing the space.

Inadequate research activities at STPA centres form the third problem. Most of the STPA centres lack enough teachers for their programmes and hence the teachers have little time for research activities. This is further aggravated by the lack of resources to conduct anything but theoretical research. Consequently, those centres that do some research, do it mostly in theoretical statistics.

The fourth problem is that lack of adequate teachers at the centres has often led to an imbalance between the subjects taught and teaching staff. Teachers tend to share courses irrespective of their specializations.

Such practice does not enable the teacher to concentrate in his/her speciality. For instance, at one STPA centre in 1989/90 academic year, out of 26 established academic positions only 14 local staff including 4 on study leave abroad were in post plus 5 expatriates. This meant that only 15 persons were doing the work of 26 people, leading to an economic statistician teaching national accounts, economic theory and economic development: he was neither adequately trained nor doing research in these topics.

The fifth problem is the low capacity at STPA centres to prepare teaching materials. This is due to inadequate funds and lack of expertise and interest on the part of teachers in the courses they teach.

The sixth problem is the lack of funds to run the institutions. The problem is more serious with regional centres such as IFORD in Yaounde, RIPS in Legon, ISSEA in Yaounde, ISAE in Kampala and IAMSEA in Kigali. The budgets of these centres heavily depend on contributions from countries that use the services of the centres, but often states do not pay on time. This forces the centres into serious financial problems.

The seventh problem concerns the high level of specialization of statisticians in the STPA centres. Of the eight centres that provide postgraduate training, only two, IFORD in Yaounde, and RIPS in Legon, have identified and developed their programmes in demography. The other six have not adequately developed their areas of specialization. Programmes at six centres are still at the experimental stage and offer several specializations depending on the availability of interested candidates and teachers. A better approach might be for each centre to identify one or two branches of statistics to offer courses at a postgraduate level. This calls for the centres to select an area of specialization and to complement rather than compete with each other.

The eighth problem concerns poor staff conditions at some STPA centres. This is a problem which has led to the centres suffering from a brain drain of qualified staff because the conditions, especially salaries, are not attractive and commensurate to qualifications. For instance, a professor with a Ph.D. and at least 10 years' experience working for ISAE earns not more than equivalent to 500 US$ per month in salary. This compares unfavorably with alternative job market offers both in the country (1,500–2,000 US$ per month) or abroad (at least 5,000 US$). As a result, staff highly trained at the expense of STPA centres work briefly for the centres on completion of studies and then leave for greener pasture.

The ninth problem concerns retaining the graduates of STPA centres in the national statistical services. After acquiring valuable experience, many STPA graduates leave CSOs for industry and international organisations which are more lucrative. This delays the CSOs from achieving self-sufficiency and requires STPA centres to continue focusing on training programs.

6. Conclusions

This article has reviewed the training of professional statisticians for Africa over the last three decades. Through STPA centres, progress has been made to increase the number of statisticians in Africa, meeting most of the original targets, and ensuring the high standards and quality of teaching programmes. In addition, the associate centres of STPA and non-STPA institutions have substantially supplemented the efforts of STPA centres to meet all the initial needs and the new demands for statisticians in Anglophone Africa.

Nevertheless, due to financial and other

problems, the STPA centres have not achieved the original goal of self-sufficiency. In addition, little progress has been made in launching the postgraduate and specialised programmes. Thus, it is recommended that donors and governments increase assistance to the STPA centres. This can be in the form of student scholarships tied to particular centres, enhanced physical facilities, research support, improved transport, laboratory equipment, international experts, better conditions to local staff and adequate budgets. Such assistance will greatly motivate the staff at the centres leading to more research, more postgraduates trained, better quality graduates, and hence greatly improve African statistics.

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