FOREWORD

The 2017-2018 indicators dashboard of our country's higher education system is more informative and enlightening than usual not just regarding the enhancement of expertise but also in terms of the evolution towards better academic, pedagogic, and administrative governance.

The indicators' trends confirm that quality or the pursuit of quality is rather constructed not enacted. The administrative, regulatory, and legal measures taken in the subsector demonstrate the coherence and consistency of the strategy adopted for the last four years.

The partnership between our country and the UNESCO International Institute for Educational Planning (IIEP- Dakar Pole) has permitted the analysis of both the factors of efficiency and the obstacles to the progress of our system towards a better quality if not excellence.

The performances of our students of the preparatory classes to engineering schools both at the national and the international levels justify the need to persevere with the conceptual, organizational, and operational rigor in our country's higher education.

On the occasion of this fourth edition, I would like to congratulate all those who have contributed to achieving the objectives of the "excellence through performance-based meritocracy" vision.

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Minister of Higher Education
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LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS:

AIY : Abdallah Ibn Yassine
BIT: International Labor Office
BTP: Construction and Building Trades
BTS: Technician Certificate
C.E.S : Certificate of Specialized Studies
CAD: Coefficient of Expenditure Rise
CEI: Internal Efficiency Coefficient
CITE : International Standard Classification of Education
CNOU : National Center for University Services
CREL : Center for the Strengthening of Modern Language Teaching
CSET : Advanced Technical Education Center of Nouakchott
DBC: Budgetary Common Expenditure
DMI: Department of Mathematics and Computer Science
DRSI: Direction of Scientific Research and Innovation
EBIOME: Marine Eco-biology and Environment
EDP: Equation of Partial Derivative
ENS : Teacher Training College
EPCV : Permanent Survey on Households Living Conditions
ESP : Higher Polytechnic School
F : Female
FC: Faculty of Shariaa
FLASS: Faculty of Arabic Language and Social Sciences
FLSH : Faculty of Arts and Human Sciences
FM : Faculty of Medicine
FOD: Faculty of Oussoul Eddine
FSJE : Faculty of Legal and Economic Sciences
GEM: Electrical and Mechanical Engineering
IES: Higher Education Establishments
Ins-ES: Inspecteur de l'Enseignement Secondaire
INS-F : Primary Education Inspector
IPGEI : Preparatory Institute for Engineering Schools
ISCAE : Higher Institute of Accounting and Business Administration
ISERI : Higher Institute of Islamic Studies and Research
ISET : Higher Institute of Technology
ISPLTI : Higher Professional Institute for Languages, Translation and Interpretation
ISSM : Higher Institute of Ocean Sciences
ISU: UNESCO Institute for Statistics
IUP : Professional University Institute
Labo (ENS) : Laboratory assistant (ENS)
LM : Modern Literary Studies
LMA : Modern Literary Studies, Arabic Track
LMB : Modern Literary Studies, Bilingual Track
LO : Classical Literary Studies
M : Mathematics
MA : Assistant Professor
MC : Associate Professor

MESRS : Ministry of Higher Education and Scientific Research
MST: Mathematics, Science, and Techniques
NR : Not Documented
OCDE : Organisation for Economic Cooperation and Development
PH : Accredited Research Director
PHD : Doctor of Philosophy
PIB : Gross Domestic Product
PR: Percentage of Repeaters
Prof1c : Junior Secondary School Teacher
Prof2c : Senior Secondary School Teacher
PU : University Professor
RGPH : General Population and Housing Census
SMIG : Guaranteed Minimum Inter-professional Wage
SN : Natural Sciences
SNA : Natural Sciences, Arabic Track
SUP M : Sup' Management
T : Total
TA: Dropout Rate
TAGSUP : Overall Intake Rates in Higher Education
TBA : Gross Admission Rate
TBS: Gross Intake Ratio
TIC : Information and Communication Technology
TM : Technical Baccalaureate
TNA : Net Intake Rate
TPA: Apparent Promotion Rate
TR: Repetition Rate
UCM : Chinguetti Modern University
UEMOA : West African Economic and Monetary Union
UIL : Lebanese International University
UM : Ouguiya
UN : University of Nouakchott
URAGAD: Algebra and Geometry Applied to Development
USIA : University of Islamic Studies of Aioun
USTM : University of Sciences, Technology, and Medicine

Executive Summary

Higher education is characterized by very small numbers of students since only 19.844 students were enrolled in 2017-2018 in the whole public and private higher education establishments (under the authority of the MHESR or not). These numbers have decreased (20.800 in 2014-2015) after the implementation of the LMD system. The share of female students and private ones have kept approximately the same values in this period (one third for the former and 4% for the latter). Students aged less than 27 years represent 74% (an improvement by 8% in comparison with the year 2015/2016).

The transition rate from secondary to higher education reached 30% between 2015-2016 and 2016-2017. The transition rate of females is lower than that of males.

The range of fields of study is composed of the following: 37% of the students enroll in “social sciences, commerce, and law” followed by the field of “Letters and arts” with 24.5% of the students. The most marginal orientations are found in the fields of agriculture with 0.8%, services with 1.2%, and engineering and processing and construction industries with 2.6% of the students.

740 permanent teachers including 51 female teachers were responsible of the teachings in the public IES for the academic year 2017-2018.

Associate professors represent more than 40% of the teachers. The ratio student/teacher in the public sector reaches 25.6 which is very close to the UNESCO norm of 25 students per teacher.

Furthermore, higher education is characterized by almost free access to studies and a significant allocation of scholarships to students.

The number of beneficiaries of scholarships and aids attains 7474 (39% of the total number of students in public establishments for the year 2017-2018).

During the year 2017-2018, 274,738 meals have been served in the restaurants under the authority of the CNOU. The transport of students to the university campus was provided by the rental of 41 buses (29 yellow buses of 75 places each, and 12 green buses of 103 places each).

The number of graduate students of public higher education establishments in 2016-2017 was distributed as follows: 1638 graduates holding a Licence degree including 600 females; 22 holding a Masters’ degree including two females; 63 engineers including 11 females; 83 holding a BTS including 8 females; 26 physicians including 15 females; 197 junior secondary school teachers including 26 females; 15 senior laboratory technologist; 108 inspectors including 2 females (39 for primary education and 69 for secondary education); and 661 holding a BA degree including 169 females.

Context

The Islamic Republic of Mauritania is a Sahelian country situated in northwestern Africa. It covers a geographical area of 1,030,700 km^2 with an extensive Atlantic coastline of 700 km.

In 2013[1], the total Mauritanian population was 3,537,368 inhabitants, with a population density of 3.4. The number of female residents is slightly superior to that of male residents with a masculinity rate of 97 men for 100 women. The urban population represented less than 49%. The demographic growth rate was around 2.8% per year.

The Mauritanian economy depends mainly on natural resources: iron, fishery, oil, and other minerals (gold and copper). Its human development index (HDI) was of 0.487 in 2014.

At the national level, the unemployment rate (in the sense of BIT) was estimated to 13% in 2014 according to the findings of the permanent survey on household living conditions in Mauritania (EPCVM 2014). The phenomenon was more urban (17%) than rural (7%) in 2014. Likewise, females seemed more affected (19%) than males (10%).

Unemployment affects the younger population (21% in 2014 for the age group 14-34 years) more than the older one (3% for the age group 35-64 years). The risk of being unemployed is thus seven times higher for a young person as opposed to an older one.

The unemployment of the youth is much worse in urban centers (27%) as opposed to rural areas (11%). In terms of gender, the unemployment of young females in more important (25%) than that of young males (20%), but the difference seems relatively of a lesser importance.

Operational record for the period 2016/2017[2]

The department engaged itself in a dynamics of reforms under which several measures have been taken and many activities realized tending to help the setting up of better conditions for the achievements of the objectives of the SCAPP if the mobilization of funding shows a positive development. The significant measures that have been taken and the realized activities for the period considered in the report are presented as follows as per the four chosen objectives:

In terms of strengthening the Institutional Monitoring and the Governance of the System

- Creation of a Mauritanian Authority of Quality Control for higher education (AMAQ-ES) ;
- Realization of a study on “a diagnosis of the Mauritanian higher education system » with the help of the UNESCO /IIPE/ Dakar Pole;

[1] Final year of the GPHC

[2] NASMO (ANNUAL SECTORAL IMPLEMENTATION NOTE FOR THE SCAPP ACTION PLAN FOR THE YEARS 2016-2017).

- Elaboration of a financial simulation model of the sector;
- Release of the second edition of the Mauritanian higher education dashboard;
- Release of the third edition of the higher education statistical yearbook;
- Release of the first edition of the university research yearbook ;
- Reinforcement of governance and professional trainings of the university of sciences, technologies, and medicine ;

In terms of improving the pertinence, quality of education, and employability of graduates

- Organization of the first edition of the national admission examination to engineering schools of Mauritania (CNIM), with an admission rate of 83.7% ;
- Opening up of six local centers for the written part of the admission examination to French engineering schools and three local centers for the orals. 37 second year students of the preparatory classes out of a total number of 91 passed the entrance exams in engineering schools in France, Tunisia, and Morocco where they are due to pursue their studies.
- Elaboration of curricula (education programs) for the training of engineers at ESP;
- Adoption by the CNESRS of a list of skills and abilities for the reclassification of higher education teachers into certain grades;
- Accreditation by the CNESRS of the curricula of the License tracks of ISCAE, of the Naval Academy, and of the three private establishments.

In terms of enhancing access to higher education trainings:

- Completion of the male students' hall of residence (2,600 places) (FKDEA, GVT) and the new refectory of the new campus (1000 meals at a time, with four rotations per meal; it hosts 4,000 students)
- Continuation of the construction works of the facilities of the Faculty of Legal and Economic Sciences, of the female students' hall of residents (1,400 places), of the mosque, as well as the surrounding shops with a progress rate of around 70% (FSD);
- Finalization of the roadways , the various campus networks, with a progress of about 90% ;
- Creation of the Institute of Mining Trades (I2SM) of Zouerate in partnership with SNIM ;
- Improvement of the criteria used for the orientation of Mauritanian students to higher education establishments abroad and to national establishments ;
- Recruitment of 74 teachers-researchers and technologists for the benefit of higher education establishments out of 119 open positions ;
- Recruitment of 6 teachers-researchers and technologists for the benefit of the Higher Polytechnic School and the Naval Academy out of 21 open positions ;

- Graduation of a first cohort of three associate professors trained in Morocco for the benefit of the Preparatory Institute for Engineering Schools.

In terms of promoting a scientific research structured around the major development problems of the country:

- Launching of the first Mauritanian highly qualified Diaspora forum ;
- Establishment of the conditions for creating scientific journals in higher education institutions;
- Definition of criteria for creating learned societies in public higher education establishments;
- Restructuration of research ;
- Creation of the High Research and Innovation Council (HCRI) chaired by the Prime Minister.

I. Socio-economic and demographic indicators

I.1 Demography

In 2016, the population was estimated to 3,805,659 inhabitants with a population density of 3.69. The demographic growth rate was situated around 2.77% per year.

I.1.A comparison of the growth rate with some countries of the sub-region

	2009	2010	2011	2012	2013
Libya	1.50%	1.30%	1.00%	0.90%	0.80%
Tunisia	1.20%	1.20%	1.10%	1.10%	1.10%
Morocco	1.00%	1.20%	1.30%	1.40%	1.50%
Algeria	1.80%	1.90%	1.90%	1.90%	1.90%
Mali	3.20%	3.10%	3.10%	3.00%	3.00%
Mauritania	2.80%	2.80%	2.70%	2.70%	2.70%
Senegal	2.80%	2.90%	2.90%	3.00%	3.00%

Table 1: Growth rates in some countries of the sub-region
Authors' calculations, data origin : indicateurs_pays_v18.1 (Dakar Pole)

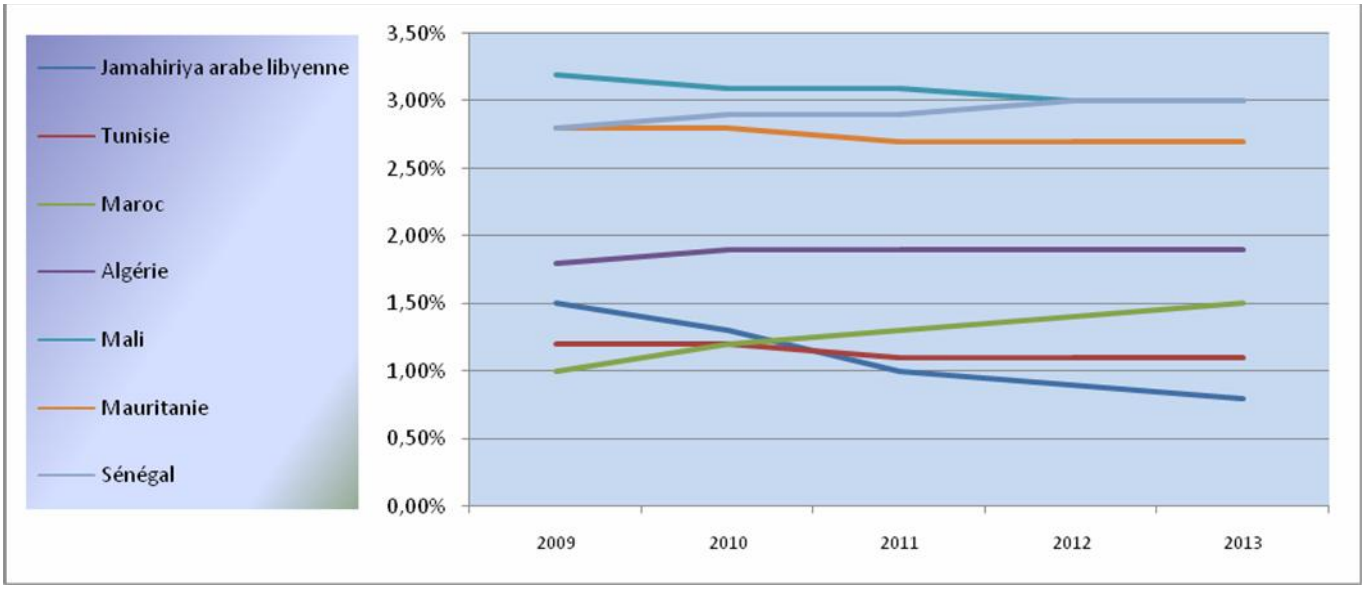


FIGURE 1 : GROWTH RATES IN SOME COUNTRIES OF THE SUB-REGION

I.2 The economy[3]

During the past fifteen years (2001-2015), the real economic growth of Mauritania has been equal to an average of 4.5%. The level of growth realized during that period is similar to the average of real growth recorded in the African countries (7.7%) or within neighboring economies such as Morocco (4.6%), Mali (4.8%), or Senegal (3.8%).

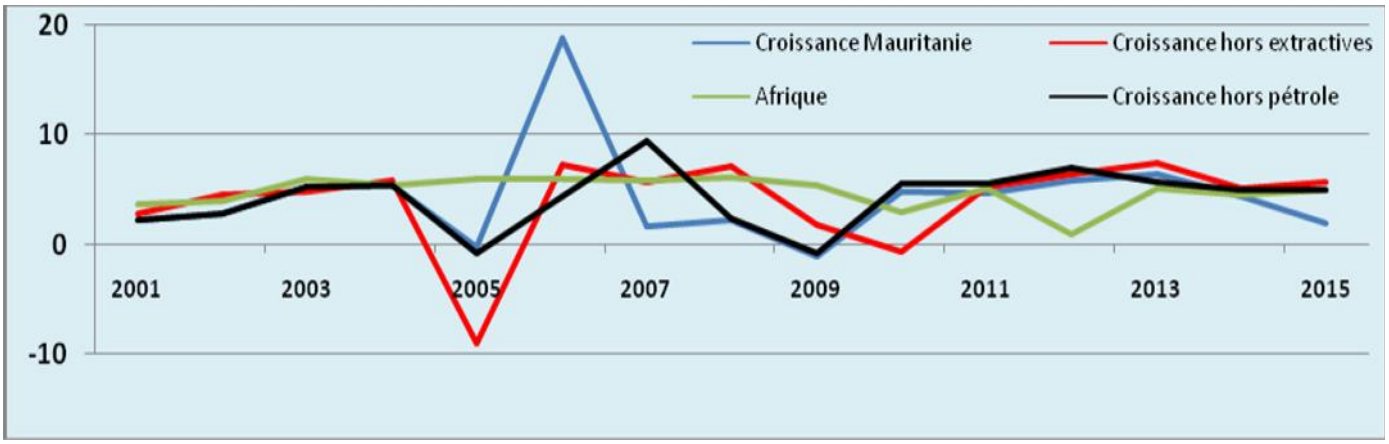


FIGURE 2 : EVOLUTION OF THE REAL GROWTH RATE (%)

I.2.a The Gross Domestic Product (GDP)

The nominal GDP of Mauritania has known a decrease since 2013 as a result of a strong decline of the prices of primary commodities, as it moved downward from 1,655.6 to 1,539.1 billion UM. The evolution of the GDP per inhabitant, as for it, has been characterized during the whole period by a fluctuation of the growth itself and, above all, by a sustained demographic development.

Comparison with some countries of the sub-region

	2008	2009	2010	2011	2012	2013
Algeria	171 518	137 587	161 783	198 768	207 802	212 453
Libya	87 236	63 069	74 804	34 707	81 915	65 516
Mali	8 779	8 988	9 440	10 666	10 254	10 882
Mauritania	3 536	3 031	3 687	4 284	3 962	4 191
Morocco	88 879	90 907	90 771	99 211	95 903	103 824
Senegal	13 449	12 802	12 882	14 461	14 041	14 796
Tunisia	44 878	43 523	44 278	46 270	45 239	46 995

TABLE 2: GROSS DOMESTIC PRODUCTS AT CURRENT PRICES IN MILLIONS OF DOLLARS (US)
SOURCE : INDICATEURS_PAYS_V18.1 (DAKAR POLE)

[3] 2016-2030 National Accelerated Growth and Shared Prosperity Strategy (draft)

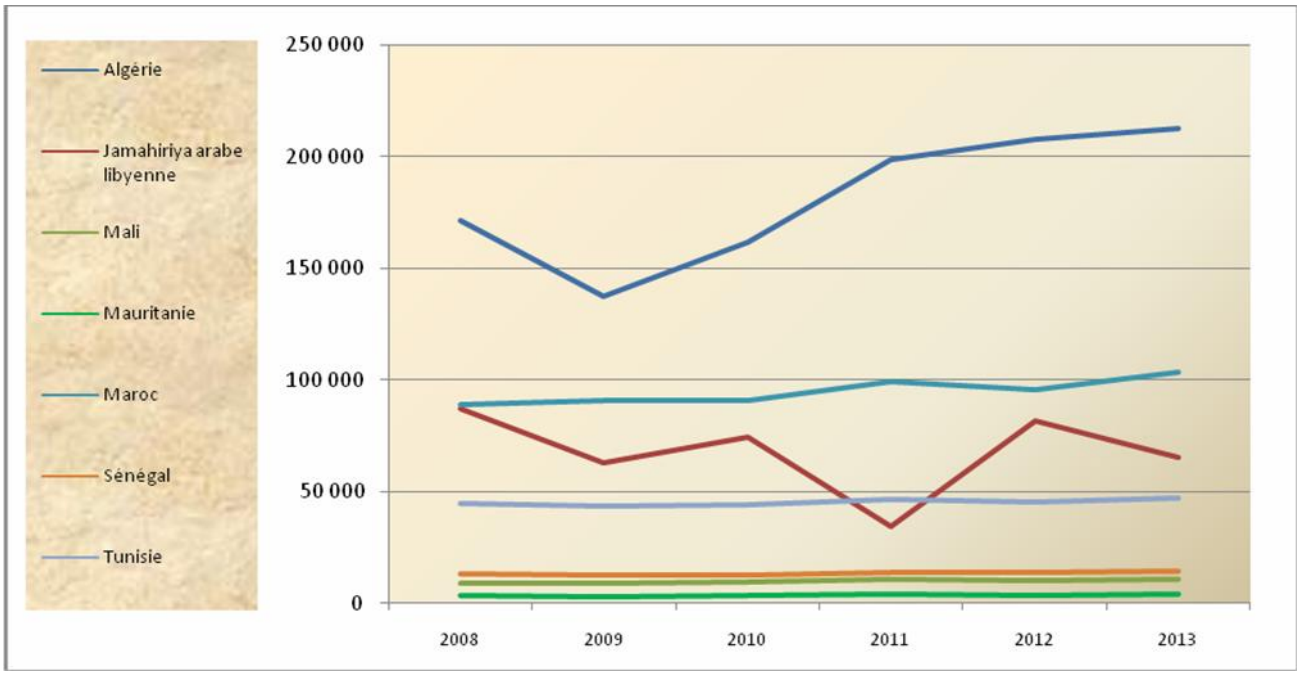


FIGURE 3 : GROSS DOMESTIC PRODUCTS AT CURRENTS PRICES IN MILLIONS OF US DOLLARS

I.2.b Human Development Index (IDH)

The IDH in Mauritania moved from 0.347 in 1980 to 0.506 in 2014. The country's ranking has gone from the 161st place in 2013 to the 156th in 2015.

IDH Comparison (rank) between some countries of the sub-region

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Algeria	88	86	87	88	86	92	92	93	93
Libya	55	54	54	56	56	60	87	64	55
Mali	162	156	159	161	170	180	181	182	176
Mauritania	133	130	134	136	142	155	155	155	161
Morocco	116	113	114	115	121	130	130	130	129
Senegal	133	131	134	135	141	152	152	154	163
Tunisia	89	84	85	83	88	92	94	94	90

TABLE 3: RANKS IN THE IDH CLASSIFICATION

Source : indicateurs_pays_v18.1 (Dakar Pole)

I.2.c Major sectors of the economy[4]

The primary sector (agriculture, livestock, fishery, forestry) has been representing an average of 31% of the Gross Domestic Product (GDP) for the period between 2001 and 2015. This sector constitutes one of the pillars of the Mauritanian economy; it generated an employment rate of 28% of the active population in 2013 according to the data of the latest general population census (RGPH).
During that time period, the extractive activities represented an average of 12.4% of the GDP, thus contributing by a rate of about 0.8% to real growth for the period.
The activities of the tertiary sector, which represented an average of 33.5% for the period between 2001 and 2015, have been employing about 64.2% of the active population according to the results of the EPCV (2014).

I.3 The job market[5]

The findings of the permanent survey on households living conditions in Mauritania (2014 EPCVM) show that the unemployment rate (in the sense of the BIT) was estimated to 13% in 2014. The phenomenon was more prominent in urban areas (17%) as opposed to rural ones (7%) in 2014. Furthermore, females seem to be more affected (19%) than males (10%) do. This is particularly true in urban zones were females are affected twice as often as males with a percentage of 25% for the former versus 14% for the latter. The fact is similar in rural zones where the unemployment rate of females reaches 12% versus 5% for males. Finally, urban females are five times more affected than rural males do (25% versus 5%).
The nature of this phenomenon is, above all, generational. Unemployment affects the younger population (21% in 2014 for the age group 14-34 years) more often than the older population (3% of the age group 35-64 years). The risk of being unemployed is therefore seven times higher for a young person as opposed to an adult one.
The lower unemployment rate observed among adults conceals in fact a very precarious situation in the job market with high under-employment and vulnerability rates. In this respect, the vulnerability of urban employments was affecting 55% of the active population in 2014. Another concern is about the age group 15-34 years of which one third (33%) is neither engaged nor integrated in an educational or a vocational system.

Integration and positioning of higher education graduates in the job market

One year after graduation, approximately three quarters of higher education graduates do not have a job.
Analyses show that unemployment affected the younger graduates (15-34 years) seven times more than older ones (35-64 years). This characteristic of professional integration is also valid for graduates of higher education especially if they enter the job market for the first time. As a matter of fact, the proportion of unemployed higher education graduates is beyond 50% one year after their graduation.
The rare PhD holders and graduates of higher professional trainings seem to have less difficulty when they graduate. With this exception, it seems that the unemployment rate of graduates one year after their graduation increases with the diploma level.

[4] Source : 2016-2030 National Accelerated Growth and Shared Prosperity Strategy (draft)

[5] *Source : Higher education and research in Mauritania : Elements of efficiency*

For example, three out of four Masters' degree holders do not have a job one year after their graduation. Although the limitations of the modern job market could be put forward as a main cause, such a high unemployment rate raises the issue of the pertinence of the training courses where the majority of young graduates originate.

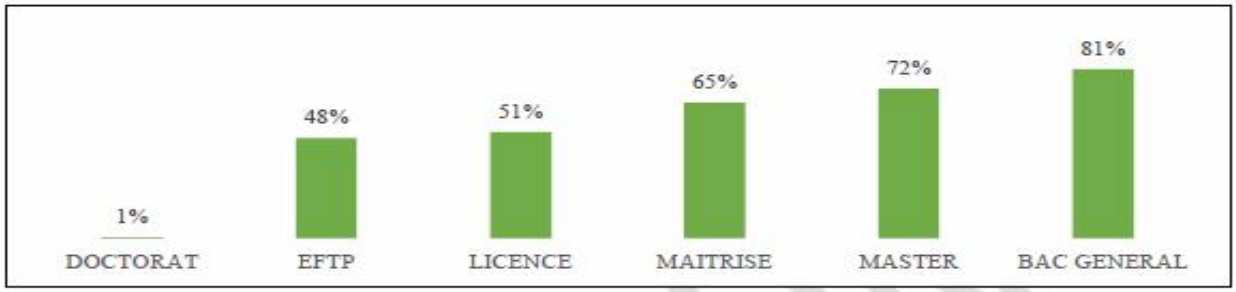


FIGURE 4 : UNEMPLOYMENT RATES OF HIGHER EDUCATION GRADUATES ABOUT ONE YEAR AFTER THEIR GRADUATION

In addition, assessing the situation of graduates one year after their graduation does not provide enough information about the difficulties they face regarding professional integration during their working lives. In this respect, an evaluation of cohorts has been realized through a follow-up of a shadow cohort. The table below displays the findings:

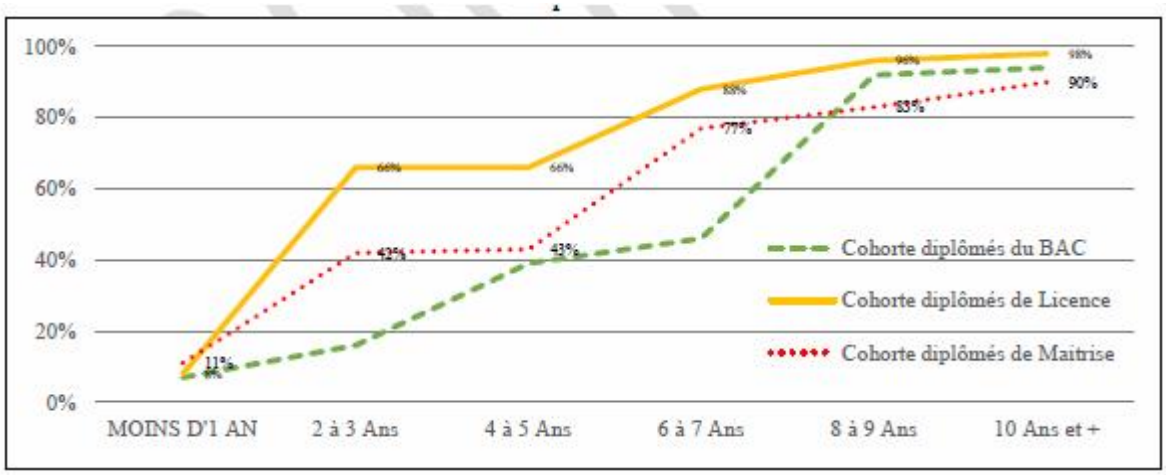


FIGURE 5 : PROFESSIONAL INTEGRATION RATE OF AN ANNUAL COHORT OF HIGHER EDUCATION GRADUATES

The average duration of access to jobs is generally very long after graduation from university. It is only about four years after graduation that half of a given cohort of graduates finds jobs. Moreover, it takes ten years for the totality of an annual cohort of graduates to be actually employed. Licence graduates enjoy generally a better integration as opposed to other higher education graduates. However, it is overall more advantageous for a young person to enter the job market with a university degree rather than a baccalaureate only.

Business sectors accessible for workers holding higher education diplomas

Graduates of higher education who declare themselves as having an employment show a clear preference for payroll employments. The data of the 2013 RGPH indicate, not

surprisingly, that a majority of them (86%) possess a payroll employment which leaves only 14% involved in non wage employments.

Thus, employees represent around 80% in the public or quasi public sector, 68% in the administration, 9% in public companies, and 13% in family companies.

In addition, the positions held by workers holding higher education diplomas are in most cases senior executive positions (39%) or mid-executives (36%). Nonetheless, a substantial proportion of these graduates hold lower positions of laborers or apprentices (12%), mainly in the informal sector. Furthermore, these positions are held in the majority of cases in structures of 3 to 20 employees, where more than three out of four jobs of the kind (78%) are in companies of such a size.

By contrast, higher education graduates involved in non wage employments are mainly found in the sector of commerce (47%) and social services (29%). Less than 10% among them are involved in agriculture, fishery, or livestock.

The job quality of higher education graduates

Access to employment is no doubt the first step towards professional integration, but the quality and sustainability of employment are no less important. They are measured here in terms of the nature of the employee's workplace and the duration of the contract. Regarding the former, the analysis of the data indicates that around half (48%) of employees in Mauritania do not have a professional occupancy (table 4.6). Graduates of higher education suffer the same situation as half of them do not enjoy a reasonable professional occupancy. As for the other half, the dominant type of locations in their activities is fixed positions in the public spaces, the marketplace, and home working. Although marginally, they can carry out their activities in the clients' places as it is the case of construction service providers, or in the public spaces in the case of BTP workers.

On the other hand, an important portion of the employees holding a diploma find themselves in precarious situations. For example, around 20% of the employees holding a higher education diploma have a work contract whose duration is less than one year.

One of the main traits of the Mauritanian job market remains a high unemployment rate of young higher education graduates as well as precarious job tenures even beyond the informal characteristics of the economy. This situation contrasts a widespread popular belief which considers earning a higher education diploma as one of the safest ways of preventing difficulties in professional integration. For the youth and their families, the experience of unemployment and work precariousness is all the more frustrating as investing in higher education studies relates to the expectancy of a high professional status.

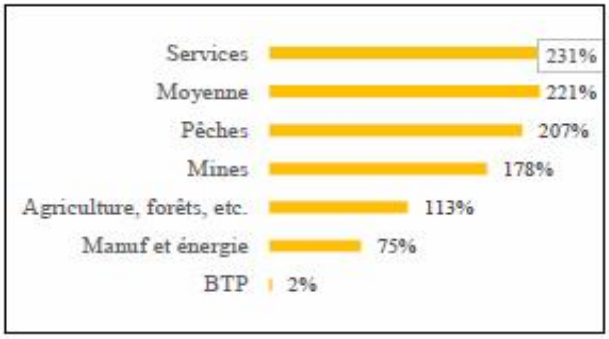
Job compensation of diploma holders

With respect to the local Mauritanian market, higher education graduates seem to be relatively well paid. Indeed, the comparison of their mean compensation with the guaranteed minimum inter-professional wage (SMIG, set since 2011 at 30,000 Ouguiyas per month) shows that the former is 221% higher (as an employee, a higher education graduate earns three times more than the SMIG). It appears that the sector of services is the one where graduates have the highest incomes; the sectors of fishery and mining fall respectively in the second and third positions. The BTP is the sector where graduates earn the lowest incomes with an average salary equivalent to the SMIG.

The comparison between the compensation of workers holding a higher education diploma with that of lower educational level workers shows that higher education diplomas are highly valued in all professional sectors. In this respect, a higher education graduate has an average compensation 63% higher than that of a secondary education graduate (figure 4.5b below). Still with reference to figure 4.5b, higher education diplomas are mostly valued in the services and manufacturing sectors in relation to secondary education diplomas. The most surprising finding relates to the absence of a significant difference in compensation between higher education graduates and secondary education graduates in the sector of BTP.

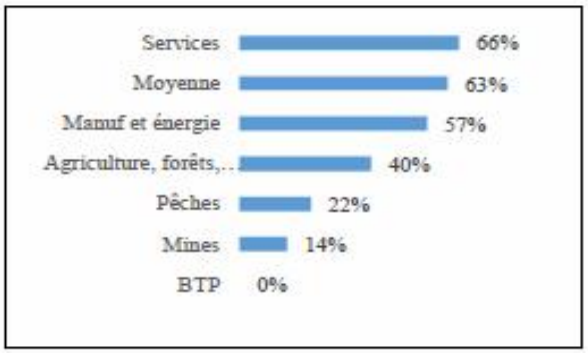
Compensation supplement of higher education graduates

In relation to the SMIG



Reading: A higher education graduate employed in the fishery sector earns 207% more than the SMIG. This means a compensation equivalent to 307% of the SMIG

In relation to the compensation of secondary education graduates



Reading : A higher education graduate recruited in the sector of services has an income that is 66% higher than that of a worker recruited with a secondary education level

FIGURE 6 : COMPENSATION SUPPLEMENT OF HIGHER EDUCATION GRADUATES

I.5 Current expenditures allocated to education

I.5.a The share of current expenditures allocated to education, excluding the state's debt (%)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2017	Year of the most recent data	The most recent data
Benin	24,2	24,5	21,1	20,9	24,3	24,4	23,9	22,3	22,1	28,4	31,1						2010	31,1
The Gambia	13,6	16,7	14,2				16	19,2	17,2	17,8	20,1	19,3	20,1				2012	20,1
Guinea		16,7	19,7	18,3											15,4		2014	15,4
Bissau Guinea			11,8	8,7	8,9	12,7	11,5	14,4	10,5	10,5	11,5	12,5	10,8	13			2013	13
Mali	26,5	21,8	22,8	23,7	23,7		29	27,9	28,7		23,7	25,9					2011	25,9
Mauritania	18	16,8	17,5	12,9	15,5	13	14,6	19,6	18,4	20,2	20,2	18,3	15,4	18,6	18,9	18.9%	2014	18,9
Morocco	28	29	29,4	29,2	27,7	24,9	25,7	24,9	22,3	26,6	26						2010	26

Senegal	30,9	21,2	25,9	26,3	30,8	39,5	39,6	41	41,1		41,3	33,7	36,8	35,3			2013	35,3
Sudan	8,1		9,2		7,1	7,3	10,2	11,2	13,2	12							2009	12
South Sudan										7,1			5,2	5,4	5,5		2014	5,5
Tunisia	0							34,6									2007	34,6
AVERAGE	18,7	21	19,1	20	19,7	20,3	21,3	23,9	21,7	17,5	24,8	21,9	17,7	18,1	13,3			21,6

TABLE 4: THE SHARE OF CURRENT EXPENDITURES ALLOCATED TO EDUCATION, EXCLUDING THE STATE'S DEBT (%)

I.5.b The share of public current expenditures on education allocated to higher education

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mali	15,7	18	17,9	15,8	16,3	15,6	14,3		17,6	18,7	19,2	20,5						
Mauritania	19,5	16	13,7	13,9	13,5				16,8			13,9					13,2%	14,1%
Mauritius	14,1			16,6	16	13,9	12,9		10,2	11	9,9	8,4	8,4					
Niger			13,1						10,3	11,8	12,5	13,7	16,9					
Senegal	28,6	29,2	28,3	26,5	27,7	26,3	24,8	27,8	22,7		27	25	27	24				
Tunisia	18,8		19,4	21,6	22,8	22,3					24							

TABLE 5: THE SHARE OF PUBLIC CURRENT EXPENDITURES ON EDUCATION ALLOCATED TO HIGHER EDUCATION

I.6 The shares of Ministries in charge of education in the state's 2016 and 2017 current expenditures

Ministries	MHESR	MEN	MASEF	MEFPNT	Current Expenditures on Education
2016	1,38%	8,07%	0,38%	0,61%	10,44%
2017	2.7%	14.4%	0.7%	1.1%	18.9%

TABLE 6: THE SHARES OF MINISTRIES IN CHARGE OF EDUCATION IN THE STATE'S 2016 AND 2017CURRENT EXPENDITURES

I.7 Distribution of 2016 and 2017 current expenditures allocated to education

Ministries	MHESR	MEN	MASEF	MEFPNT	Current Expenditures on Education
2016	13,18%	77,30%	3,65%	5,87%	100%
2017	14.1%	76.2%	3.8%	5.9%	100%

TABLE 7: DISTRIBUTION OF 2016 AND 2017 CURRENT EXPENDITURES ALLOCATED TO EDUCATION

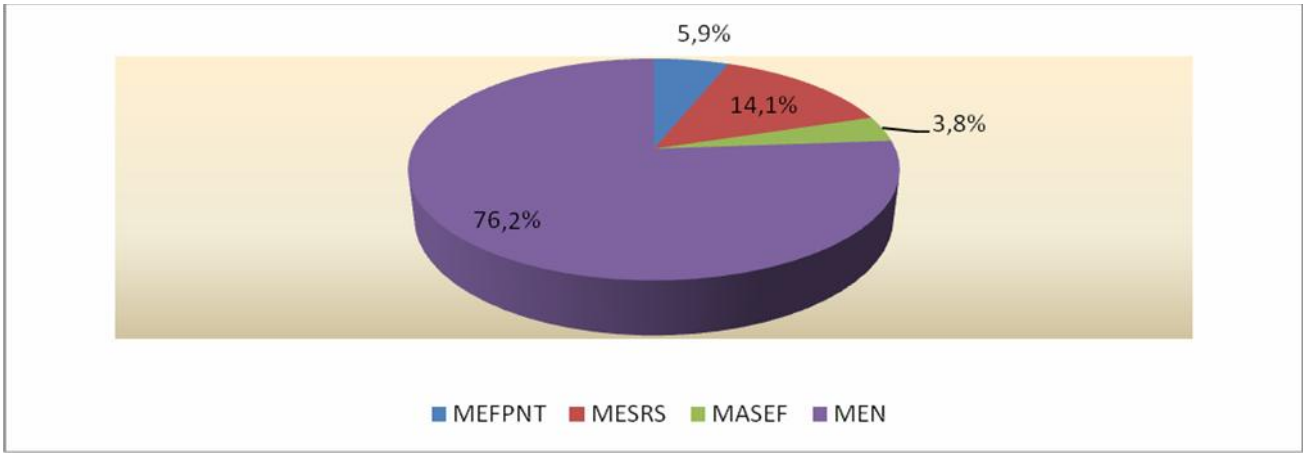


FIGURE 7 : DISTRIBUTION OF 2016 AND 2017 CURRENT EXPENDITURES ALLOCATED TO EDUCATION

Global comparison of the share of higher education in the current expenditures on education (in % ; in countries where the GDP per inhabitant ranges between 700 and 1,800 USD) :

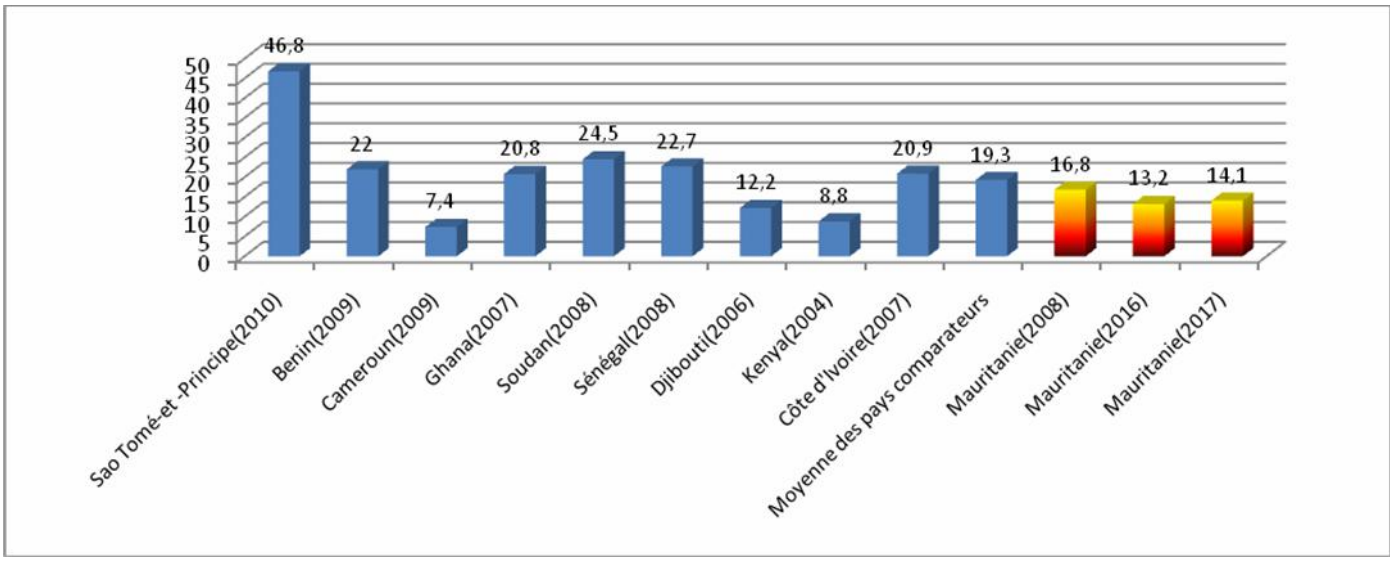


FIGURE 8 : THE SHARE OF HIGHER EDUCATION IN THE CURRENT EXPENDITURES ON EDUCATION (IN % ; IN COUNTRIES WHERE THE GDP PER INHABITANT RANGES BETWEEN 700 AND 1,800 USD)

Source : RESEN Sao Tome-and-Principe 2014, DSP Mauritania

II. Access and enrolment

During the last few years pre-university trainings have developed at a high speed as an increasing number of pupils complete primary and secondary education. This progress triggers automatically an increase in the demand for higher education.

Data show that the number of higher education students in Mauritania has increased significantly since it moved from 14,368 students in the public institutions in 2007-2008 to 19,843 students in 2017-2018, and from 331 to 907 in the private institutions during the same period.

The number of students for 100,000 inhabitants moved from 434 in 2010 to 505 in 2017. The transition rate from secondary to higher education is 30%.

II.1. Gross Admission Rate (TBA)

Year	2014/2015	2015/2016	2016/2017	2017/2018
TBA	11,05%	*7,8%*	*5,8%*	*8.8%*

TABLE 8: GROSS ADMISSION RATE (TBA)

The Gross Admission Rate corresponds to the number of new students enrolled in first year in higher education establishments without taking age into account, expressed in percentage of the population having the official higher education entry age.

II.2. Net Intake Rate in higher education (TNA)

Year	2014/2015	2015/2016	2016/2017	2017/2018
TNA	0,7%	0,5%	0,4%	0.7%

TABLE 9: NET INTAKE RATE IN HIGHER EDUCATION (TNA)

The Net Intake Rate in higher education is defined as follows: the total number of new students enrolled in first year in higher education establishments having the official higher education entry age, expressed in percentage of the population of the same age.
Comment: The decrease of the Intake Rate between 2014 and 2016 is justified by the measures undertaken by the MHESR, especially the introduction of the LMD standards (complying with the maximum duration for earning a diploma). A recovery in the TNA growth is noticed in 2017-2018.

II.3. Number of higher education students for 100,000 inhabitants during the academic year 2017/2018

The number of higher education students in Africa has experienced a rapid average annual growth by 8.3% moving from 2.6 to 8.6 million students from 1990 to 2006. In Francophone countries the number of students increased more than twice during the same period as they moved from 164 to 392 students for 100,000 inhabitants (1).
In addition to the demographic growth, the progress in the numbers of higher education students is justified by a policy of universal enrolment in primary education and an increase in the completion rates in secondary education. Using the number of students for 100,000 inhabitants as an indicator, it is noticed that it moved from 434 (2) in 2010 to 505 in 2017/2018 in Mauritania, whereas access to higher education in the UEMOA countries was around 590 in 2006 representing 0.59% of the population remaining below the UNESCO standards which set that 2% of a country's population should access higher education. These data demonstrate the extent of the efforts that must be made in order to secure more access of young people to higher education notwithstanding the rapid progress experienced during the last few years. The figure below outlines a comparison of the values of this indicator in the sub-region.

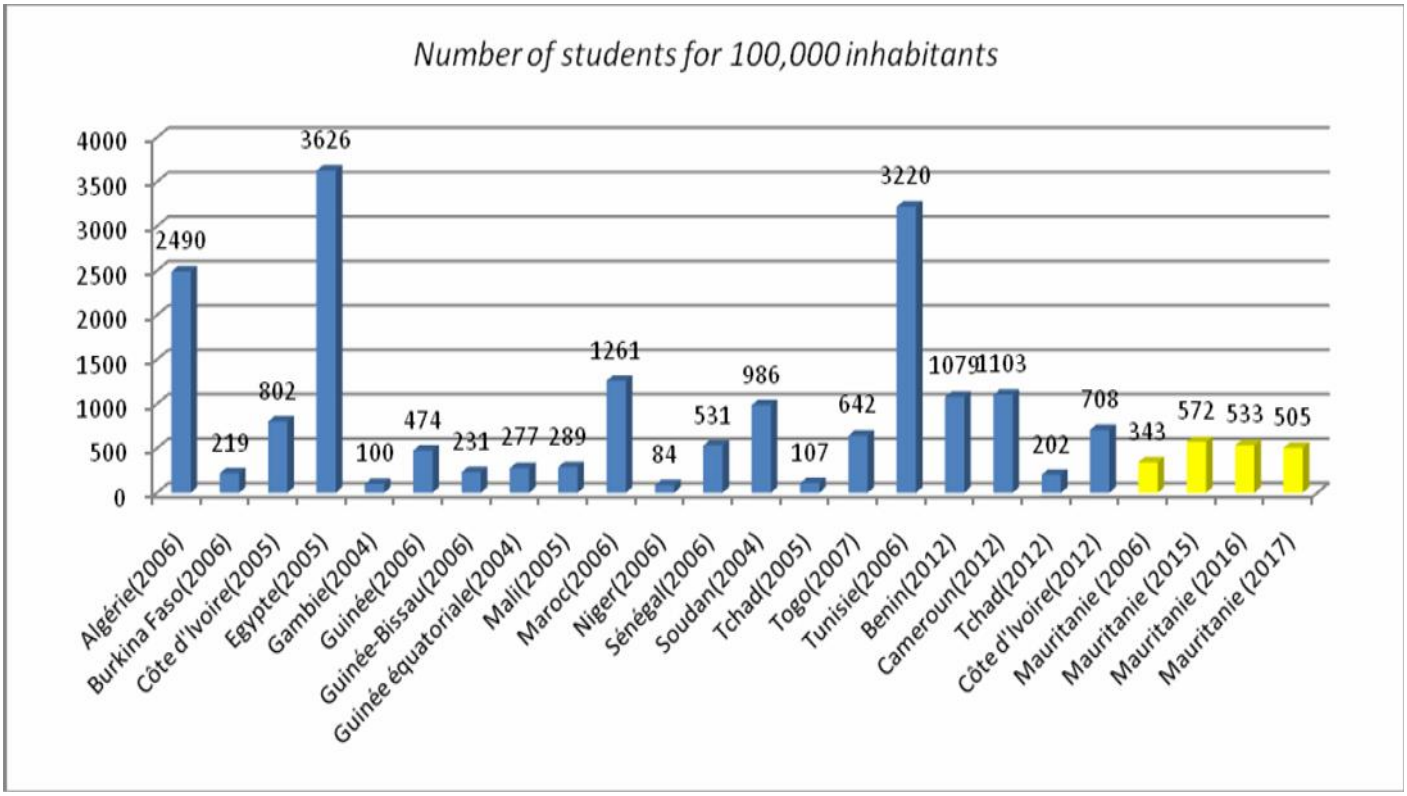


FIGURE 9 : COMPARISON OF THE NUMBER OF HIGHER EDUCATION STUDENTS FOR 100 000 INHABITANTS IN THE SUB-REGION

(1) Source : Higher education reforms in Africa : Elements of the general framework. Dakar Pole (UNESCO-BRED) .
(2) Source : AFD Group, sectoral intervention framework

NB : It should be noticed that this indicator (number of higher education students for 100,000 inhabitants) concerns all the students at every level and in every higher education training course. In principle, it includes all the students enrolled in the national territory regardless of their nationality or origin, in exception, however, of nationals enrolled abroad or in an establishment abroad but depending on the national educational system. The value of this indicator demonstrates the extent of the efforts that must be made to meet the international standards (2000 students for 100,000 inhabitants).

II.4. Secondary-Higher education Transition Rates (TT)

2014/2015				2015/2016				2016/2017			
Transition rate			Parity Index	Transition rate			Parity Index	Transition rate			Parity Index
M	F	T	0,61	M	F	T	0,64	M	F	T	0.5
40%	24%	33%		39%	25%	33%		39	19.3	30%	

TABLE 10 : SECONDARY-HIGHER EDUCATION TRANSITION RATES

Comment: the secondary-higher education Transition Rate between the school year 2015/2016 and the school year 2016/2017 was 30%. This shows a decrease by 3 percentage points in relation to the preceding year.

In terms of gender, the transition of female students from secondary to higher education is lower than that of male students. Thus, 100 male students among the final secondary education year in 2015/2016 accessed higher education in 2016/2017 versus 50 female students only. The parity index of the transition rate is 0.5. In relation to the year 2015/2016, the transition rate of male students remained constant while that of female students experienced a big decrease by 6 points.

II.5. OVERALL INTAKE RATES IN HIGHER EDUCATION (TAGSUP)

Year	2014/2015	2015/2016	2016/2017	2017/2018
New students enrolled in first year in a higher education institution in Mauritania	6305	5799	5172	6687
18 years old population (year n-1)	80737	76988	74524	76176
TAG Sup	7,8%	7,5%	6,9%	8,8%

TABLE 11: OVERALL INTAKE RATES IN HIGHER EDUCATION (TAGSUP)

The TAGSUP allows prospective analyses of the potential pressure that independent or concomitant progress characterizing the completion of secondary education can put on higher education, including the admission rates in the Baccalaureate and the transition rates towards higher education. A marked 2% improvement can be noticed.

II.6. Gross Enrolment Ratio in Licence (TBS)

In 2009, the gross enrolment ratio (TBS) in higher education in Francophone Africa did not exceed 11% as opposed to a global average of 27% and a rate of 70% for North America and Western Europe.

This low higher education intake ratio in Francophone Africa conceals big disparities. With intake ratios of 34% and 31% respectively, Tunisia and Algeria are the only countries in Francophone Africa where enrolment in post Baccalaureate education exceeds the global average.

In contrast, this ratio falls around an average of 6.3% in the UEMOA countries. In some African countries such as Chad, Central African Republic, and Niger higher education remains still embryonic with intake ratios of 2%, 2%, and 1% respectively**.

The comparison of gross enrolment ratios (TBS) and second cycle completion rates in secondary education with higher education completion rates reveals a strong pressure on higher education needs. In Mauritania, the gross enrolment ratio in the second cycle of secondary education was six (6) times higher than that of higher education in 2009; the completion rate of secondary education was nine (9) times higher that the gross intake ratio in higher education for the same year. However, the gross enrolment ratio in the second cycle of secondary education was two (2) times higher than that of higher education in 2015; the completion rate of secondary education was two (2) times higher than the gross enrolment ratio in higher education for the same year.

By comparison, the gross enrolment ratio in the second cycle of secondary education is four (4) times higher than that of higher education in Togo. In Burkina Faso, the completion rate of secondary education is three (3) times higher than the gross enrolment ratio in higher education. This ratio reaches 4.7 on an Africa-wide scale in spite of a TBS of just 23%**.

(*)Source: MHESR/MAURITANIA
(**) Source : National Dialogue on the future of higher education in Senegal

II.6.a. Gross Enrolment Ratio in some African countries

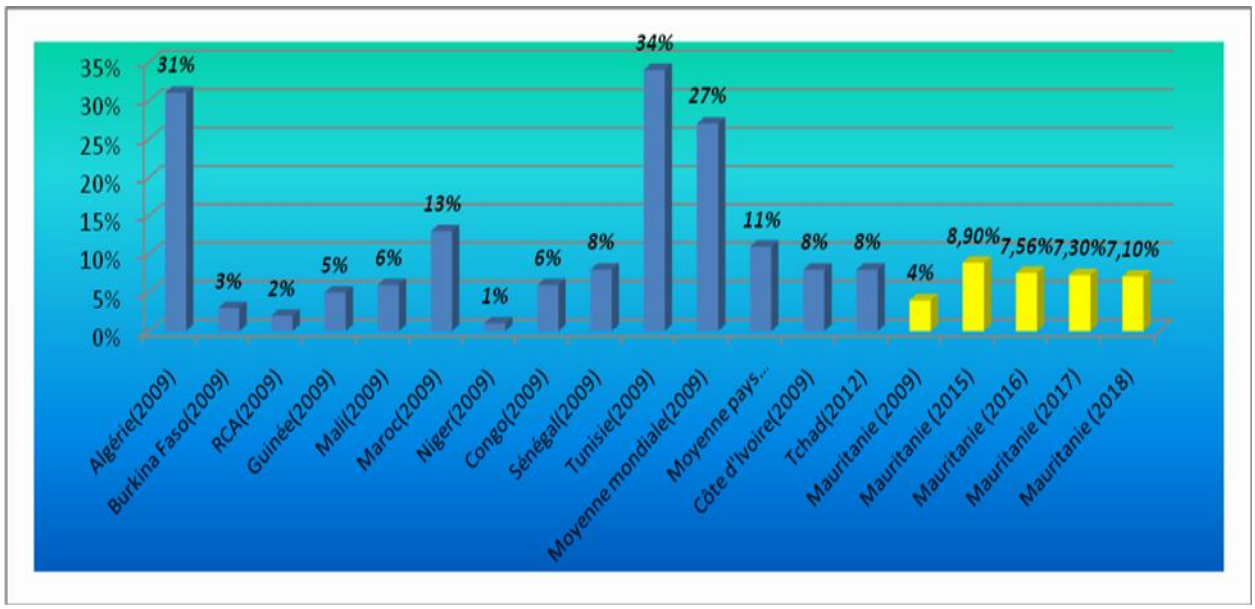


FIGURE 10 : GROSS ENROLMENT RATIO
Source: Dakar Pole, UNESCO-BREDA, Statistical Yearbook of Higher Education in Mauritania 2015-2016

II.6.b Higher education gross enrolment ratios in Francophone Africa in 2009

Country	Gross Enrolment Ratio in licence (in %)	Secondary education completion rates /TBS in higher education	TBS in secondary education/ TBS in higher education	Student/ teacher ratio
Mauritania (2018)	7.1			26
Mauritania (2017)	7.3			28
Mauritania (2016)	7.6	-	-	28
Mauritania (2015)	9%	2 ,27	2,47	28
Mauritania (2009)	4%	9 ,43	6,33	33,8 (2006)
Benin (2009)	6%	1,8	3,0	
Cameroon (2009)	9%	1,4	2,7	31,2 (2006)
Chad (2012)	2%			9,5 (2006)
Ivory Coast (2009)	8%	1,5	1,9	
Tunisia (2009)	34%			
Algeria(2009)	31%			
Morocco (2009)	13%			
Mali (2009)	6%	1,2	2,0	32,9 (2006)
Congo (2009)	6%			
DRC (2009)	6%			
Togo (2009)	5%	1,8	4,0	
Guinea (2009)	5%	1,3	3,3	29 (2006)
Burkina Faso (2009)	3%	3,0	3,5	29 (2006)
CAR (2009)	2%			
Niger (2009)	1%	2,0	3,0	10,4 (2006)
Senegal (2009)	8%			
The average of comparator countries*	**9%**	**1,8**	**2,9**	**25,5**

TABLE 12: HIGHER EDUCATION GROSS ENROLMENT RATIOS IN FRANCOPHONE AFRICA IN 2009

Source: Dakar Pole, UNESCO-BREDA. World Bank. UNESCO. Performance analyses Consulting, 2011

II.6.c The situation of education and trainings in developing countries

	TBS Evolution in the second cycle of general secondary education (%)		TBS Evolution in higher education (%)	
	1999	**2010**	**1999**	**2010**
Sub-Saharan Africa	19	31	3	7
South and West Asia	31	47	6	17
Arab States	46	49	20	24
Developing countries		53		18

TABLE 13: THE SITUATION OF EDUCATION AND TRAININGS IN DEVELOPING COUNTRIES

Source: HIGHER EDUCATION REFORMS IN AFRICA: ELEMENTS OF THE GENERAL FRAMEWORK

II.6.d Gross Enrolment Ratio in Licence

	Private	Public			19-21		
Row labels		Schools	Universities and institutes	Grand Total	years Population	TBS	Parity index
Females	**154**	**208**	**5439**	**5801**	**118282**	4,9%	
1A	59	104	2616	2779			
2A	51	96	1483	1630			
3A	44	8	1340	1392			
Males	**284**	**1063**	**9445**	**10792**	**114493**	9,4%	
1A	144	452	4476	5072			0,5
2A	79	544	2599	3222			
3A	61	67	2370	2498			
General	**438**	**1271**	**14884**	**16593**	**232775**	7,1%	
1A	203	556	7092	7851			
2A	130	640	4082	4852			
3A	105	75	3710	3890			

TABLE 14: GROSS ENROLMENT RATIO IN LICENCE

❖ Evolution of the TBS

Year	Gender	TBS	Parity index
2014/2015	General	8,90%	**0.49**
	Females	5,90%	
	Males	12,20%	
2015/2016	General	7,57%	**0.48**
	Females	4,97%	
	Males	10,37%	
2016/2017	General	7.3%	
	Females		
	Males		
2017/2018	General	7.1%	**0.5**
	Females	4.9%	
	Males	9.4%	

TABLE 15: EVOLUTION OF THE TBS

Comments :

The table above shows an improvement of the parity index and a drop of the TBS. *For every 100 Licence-aged individuals correspond only seven (7) of all ages who actually are in that higher education level.*

- *For every 100 Licence-aged male individuals correspond only nine (9) of all ages who actually are in that higher education level.*
- *For every 100 Licence-aged female individuals correspond only five (5) of all ages who actually are in that higher education level.*

II.7. Mauritanian scholarship students abroad

II.7.a Mauritanian students holders of scholarships abroad by cycle and host country

	C1		C2		C3		Total	
	T	F	T	F	T	F	T	F
Algaria	32	7	67	11	15	0	114	18
Ivory Coast	1	1	0	0	0	0	1	1
EGYPT	2	1	6	2	8	1	16	4
France	9	0	46	4	23	5	78	9
Mali	0	0	1	0	0	0	1	0
Morocco	122	19	166	30	144	29	432	78
Senegal	57	22	90	22	93	28	240	72
Sudan	1	0	6	1	0	0	7	1
Tunisia	115	24	131	36	35	5	281	65
Turkey	0	0	1	0	2	0	3	0
Grand T	339	74	514	106	320	68	1173	248

TABLE 16: MAURITANIAN STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD BY CYCLE AND HOST COUNTRY

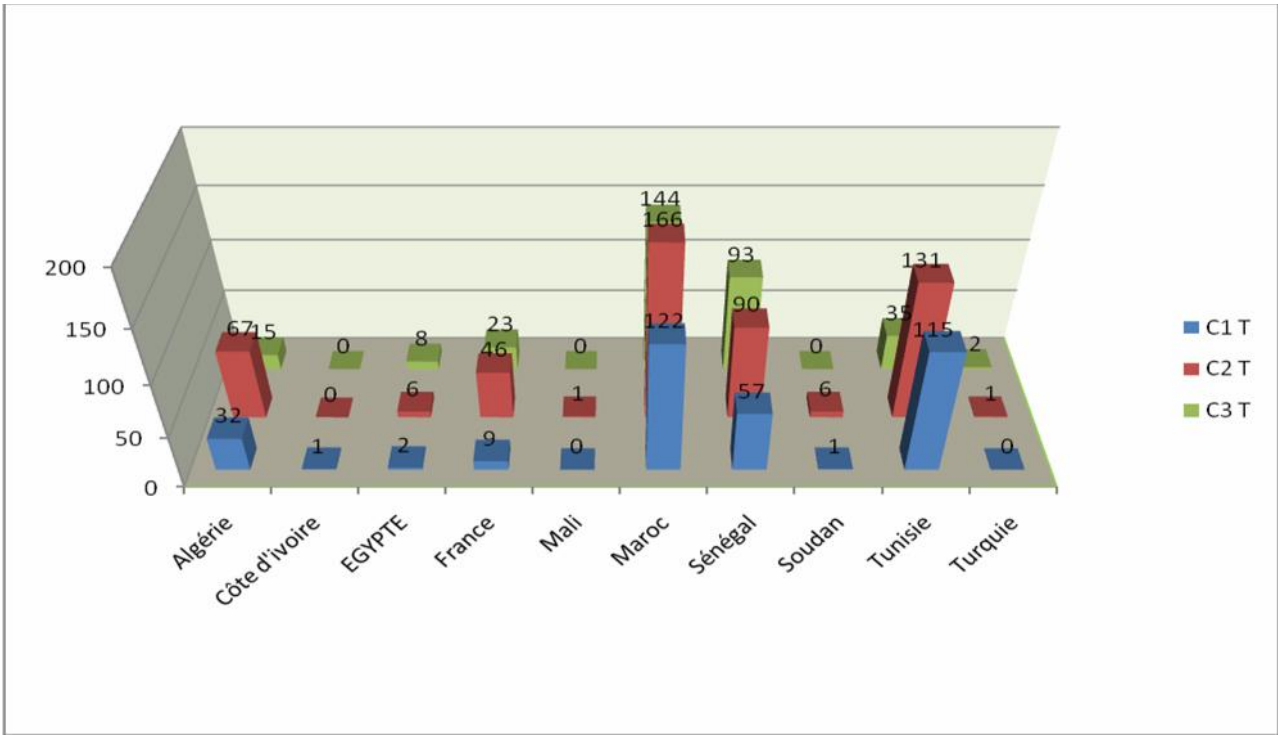


FIGURE 11 : MAURITANIAN STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD BY CYCLE AND HOST COUNTRY

II.7.b Mauritanian students holders of scholarships abroad by field of study

Field of study	2014/2015	2015/2016	2016/2017	2017/2018
Agriculture		6	24	24
Engineering, processing and construction industries	76	275	205	185
Letters and arts	92	84	27	4
Health and social protection	370	343	345	394
Sciences	648	426	447	456
Social sciences, commerce, and law	118	181	102	90
Services		3	3	4
Education		18	11	16
Grand total	**1304**	**1336**	**1164**	**1173**

TABLE 17 : MAURITANIAN STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD BY FIELD OF STUDY

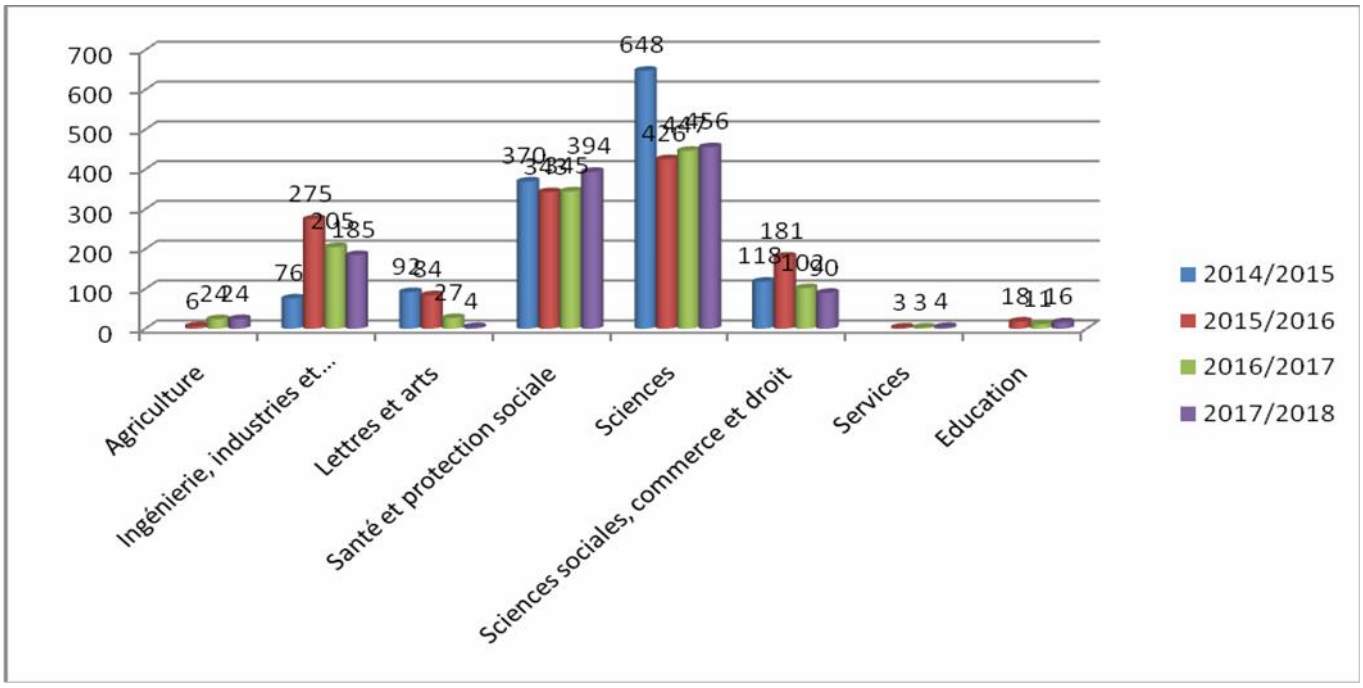


FIGURE 12 : DISTRIBUTION OF MAURITANIAN STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD BY FIELD OF STUDY

- **Evolution of the number of students holders of scholarships abroad from 2014/2015 to**

2017/2018

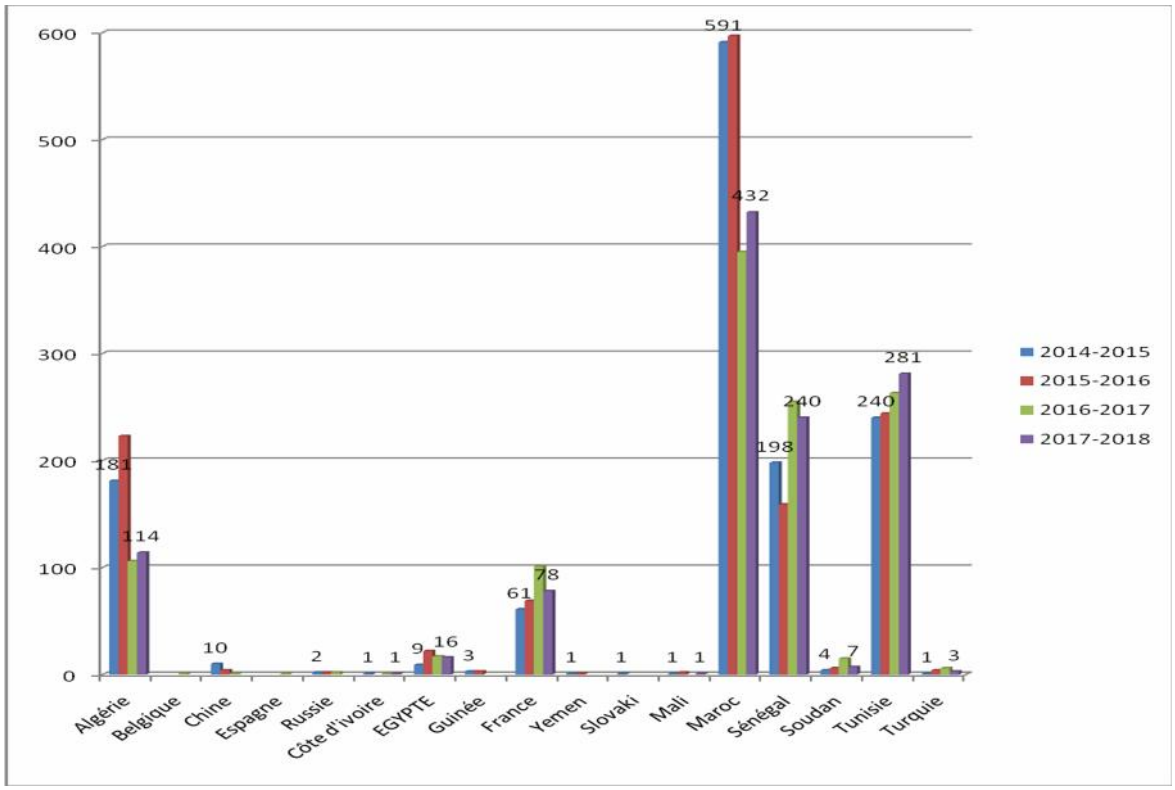


FIGURE 13 : EVOLUTION OF THE NUMBER OF STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD FROM 2014/2015 TO 2017/2018

	1Y		2Y		3Y		4Y		5Y		6Y		7Y		M1		M2		D		**Total**	
	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F
Algeria	29	7	0	0	3	0	0	0	0	0	4	0	7	0	10	3	57	8	4	0	114	18
IVORY COAST	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
EGYPT	1	0	0	0	1	1	4	2	2	0	3	0	3	1	0	0	0	0	2	0	16	4
France	0	0	0	0	9	0	16	0	11	2	1	0	0	0	2	0	16	2	23	5	78	9
MALI	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Morocco	35	6	28	6	59	7	47	10	38	6	18	4	25	6	25	5	56	9	101	19	432	78
Senegal	16	9	16	4	25	9	28	9	41	10	27	4	32	7	1	0	14	2	40	18	240	72
SUDAN	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	4	0	0	0	7	1
Tunisie	41	10	16	5	53	8	33	6	21	2	7	2	2	0	25	6	55	22	28	4	281	65
TURKEY	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	0
Grand total	123	32	60	15	151	26	130	28	115	20	60	10	69	14	63	14	202	43	200	46	1173	248

TABLE 18: MAURITANIAN STUDENTS HOLDERS OF SCHOLARSHIPS ABROAD BY LEVEL AND HOST COUNTRY

Among the most important host countries *The highest number of students by level and country (among the 5)*

II.7.c Foreign students enrolled in Mauritanian universities by home country

- *Number of students by home country*

HOME COUNTRY	Afghanistan	Germany	Saudi Arabia	Bulgara	France	Benin	Cameroon	Ivory Coast	Egypt	The Gambia	Guinea	Kenya	Kuweït	Irak	Libya	Latvia	Mali	Morocco	Niger	Nigeria	Palestine	Senegal	Syria	Tunisia	Togo	Burkina Faso	Turkey	Total
Number	1	2	5	1	1	1	2	9	2	21	1	1	1	1	2	1	23	84	1	1	10	28	7	42	1	3	1	253

TABLE 19: FOREIGN STUDENTS ENROLLED IN MAURITANIAN UNIVERSITIES BY HOME COUNTRY

The 5 biggest groups

- *Distribution by institution*

	Public					Private					
Host institution	FLASS	FLSH	FM	FSJE	ISERI	UCM	SUP M	UIL	AIY	GAC	Grand total
Number	1	6	63	14	62	75	7	8	11	6	253

TABLE 20: FOREIGN STUDENTS ENROLLED IN MAURITANIAN UNIVERSITIES BY HOST INSTITUTION

- *Distribution by level*

Level	L1	L2	L3	M1	M2	D1	D2	D3	Total
Number	60	20	22	100	7	1	4	39	253

TABLE 21: FOREIGN STUDENTS ENROLLED IN MAURITANIAN UNIVERSITIES BY INITIAL LEVEL

The most attended level

II.7.d Distribution of Mauritanian students by age and gender

Age	2014/2015		2015/2016		2016/2017		2017/2018	
	T	F	T	F	T	F	T	F
< 19 years	263	98	260	112	248	109	323	145
19 years	511	211	497	200	506	221	692	333
20 years	946	368	1040	425	976	394	1185	512
21 years	1581	533	1652	590	1589	600	1767	721
22 years	2025	726	2161	694	2111	699	2232	830
23 years	2312	717	2306	753	2439	728	2517	837
24 years	1959	621	2312	722	2214	715	2461	733
25 years	1863	550	1718	550	1964	602	1988	633
26 years	1836	569	1496	446	1416	453	1601	512
27 years	1394	426	1387	468	1141	340	1035	342
28 years	1095	380	996	316	1006	352	811	266
29 years	918	298	733	245	683	216	655	237
30 years	749	247	642	224	483	165	424	139
> 30 years	3117	991	2921	881	2478	731	2095	593
ND	233	71	177	59	117	37	58	13
Total	**20800**	**6806**	**20298**	**6685**	**19371**	**6362**	**19844**	**6846**

TABLE 22: MAURITANIAN STUDENTS BY AGE AND GENDER

Comment: Evolution of the number of students over age 28

	2014/2015	2015/2016	2016/2017	2017/2018
Number of students over age 28	**5879**	**5292**	**4650**	**3985**
Total number	**20800**	**20298**	**19371**	**19844**
%	**28%**	**26%**	**24%**	**20%**

TABLE 23: EVOLUTION OF THE NUMBER OF STUDENTS OVER AGE 28

A significant improvement of the percentage of students having higher education ages is noticeable. In fact, the number of students over age 28 dropped from 28% in 2014/2015 to 20% in 2017/2018.

III. Internal efficiency

III.1 Review

The table below presents a review of the definition of some internal efficiency indicators.

Indicator	Definition		Interpretation
Apparent promotion rate	*It corresponds to the proportion of students registered in a given class who move in the next grade as early as the following year.*	$TPA_j^T = \frac{NE_{j+1}^{T+1}}{EE_j^T} \times 100$	*High promotion rates stand for high survival rates.*
Actual rate of promotion or actual rate of transition of grade j for the year T	*It measures the actual proportion of students who pass from one grade to the next*	$TPE_j^T = \frac{NE_{j+1}^{T+1}}{NE_j^T} \times 100$	*The higher the in-between grades transition rate, the greater the number of students who pass from one grade to the other.*
Repetition rate	*The repetition rate is the proportion of repeaters in a class i for a given year t who were in the very same class the previous year (t-1)*	$TDR = \frac{RD_j^T}{EE_j^{T-1}} \times 100$	*A high repetition rate means a high degree of grade repetition. Such a situation can lead to a significant dropout level or an artificial blow of the Gross Enrolment Ratio.*
Dropout rate	*It is the percentage of pupils in a given grade who dropout school during or at the end of the school year.*	*Droupout rate= (1 – Apprent promotion rate – Repetition rate)*	*Ideally, this rate should be close to 0% ; a high dropout rate is a sign of internal efficiency problems within educational systems. The comparison of rates between years of study allows identifying the years of study policies must target in priority.*
Percentage of repeaters	*It corresponds to the percentage of repeaters for a given year and a given grade in relation to the total number of students of the same grade level the same year.*	$PR = \frac{RD_j^T}{EF_j^T} \times 100$	*A high percentage of repeaters blows artificially the Gross Enrolment Ratio and limits the number of places schooling as well as the number of places for incoming students.*

TABLE 24: DEFINITION OF SOME INTERNAL EFFICIENCY INDICATORS

III.2 SUMMARY TABLE OF INDICATORS FOR THE PROMOTION OF HIGHER EDUCATION INSTITUTIONS

The following tables display the indicators useful in the calculation of internal efficiency using the transversal method.

III.2.a Indicators for the promotion of higher education institutions (in exception of the FM)

Institution	School year	students	Level				L1			L2			L3		
			L1	L2	L3	Graduates	TPA	TR	TA	TPA	TR	TA	TPA	TR	TA
FST	16/17	Eff	1418	913	847	540	68%	17%	15%	92%	1%	7%	64%	6%	30%
	17/18	Eff	1794	972	890										
		Red	247	9	54										
IUP	16/17	Eff	338	234	137	110	68%	11%	22%	84%	12%	3%	80%	7%	12%
	17/18	Eff	302	258	207										
		Red	36	29	10										
FSJE	16/17	Eff	1327	1090	1265	248	58%	22%	20%	86%	7%	8%	20%	14%	66%
	17/18	Eff	1665	837	1110										
		Red	296	73	178										
FLSH	16/17	Eff	1003	774	873	280	65%	23%	12%	93%	3%	3%	30%	5%	65%
	17/18	Eff	1125	681	767										
		Red	230	25	45										
ISCAE	16/17	Eff	378	338	289	278	74%	24%	2%	74%	3%	22%	96%	0%	4%
	17/18	Eff	562	291	251										
		Red	91	11											
ISET	16/17	Eff	91	83	60	60	91%	2%	7%	95%	1%	4%	100%	0%	0%
	17/18	Eff	157	84	79										
		Red	10	1											
FC	16/17	Eff	111	110	86	76	75%	6%	19%	91%	4%	5%	88%	7%	5%
	17/18	Eff	165	87	106										
		Red	7	4	6										
FLASS	16/17	Eff	99	63	65	52	83%	6%	11%	84%	6%	10%	80%	5%	15%
	17/18	Eff	146	86	56										
		Red	6	4	3										
FOE	16/17	Eff	55	25	19	16	64%	0%	36%	88%	8%	4%	84%	11%	5%
	17/18	Eff	57	37	24										
		Red	0	2	2										

TABLE 25: INDICATORS FOR THE PROMOTION OF HIGHER EDUCATION INSTITUTIONS (IN EXCEPTION OF FM)

III.2.b Indicators for the promotion of the Faculty of Medicine

	PCEM1		PCEM2		DCEM1		DCEM2		DCEM3		DCEM4		TCEM1		Graduates
	Number	Repeaters	Number	Repeaters	Number	Repeaters	Number	Repeaters	Number	Repeaters	Number	Repeaters	Number	Repeaters	
2016-2017	246		139		151		165		72		62		138		26
2017-2018	232	42	193	1	159	21	153	30	76	24	130	92	130	16	
TPA		78%		99%		81%		81%		72%		61%		19%	
TR		17%		1%		14%		18%		22%		39%		67%	

TA	5%	0%	5%	1%	6%	0%	14%

TABLE 26: INDICATORS FOR THE PROMOTION OF THE FACULTY OF MEDICINE

III.3 2016/2017 GRADUATES

III.3.a Distribution of graduates by diploma

Licence		Master		engineer		Medecine		Ins A-F		Insa-ES		Labo (ENS)		Prof - 1C		BTS		BA		Grand total	
T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F
1638	600	22	2	63	11	26	15	39	2	69	0	15	0	197	26	83	8	661	169	2813	833

TABLE 27: DISTRIBUTION OF GRADUATES BY DIPLOMA

III.3.b Number of graduates per number of years spent in the institution

- ***Licence degree***

		Number of graduates per number of years spent in the institution (Licence)							**Grand total**
Institution	Gender	3 years	4 years	5 years	6 years	7 years	8 years	ND	
FC	T	57	11	8					76
	F	13	8	2					23
FLASS	T	52							52
	F	18							18
FLSH	T	80	113		61			4	258
	F	25	41		32			1	99
FOE	T	16							16
	F	1							1
FSJE	T	170	54	14	5		3	3	249
	F	59	23	6	1		1	1	91
ISCAE	T	205	60	9	3	1			278
	F	106	26	3	2				137
ISET	T	49	10	1					60
	F								0
IUP	T	80	25	3	2				110
	F	53	9						62
FST	T	448	52	24	10	2		4	540
	F	144	12	8	6				170
Total	**T**	**1157**	**325**	**59**	**81**	**3**	**3**	**11**	**1639**
	F	**419**	**119**	**19**	**41**	**0**	**1**	**2**	**601**

TABLE 28: NUMBER OF GRADUATES PER NUMBER OF YEARS SPENT IN THE INSTITUTION (LICENCE)

- ***BA degree***

		Number of graduates per number of years spent in the institution (BA)														**Grand total**
Institution	Gender	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	15 years	16 years	18 years	NR	
ISERI	T	8	455	26	100	35	11	5	8	4	2	2	1	2	2	661
	F	1	103	5	37	10	6	1	2	1	1	1		1		169

TABLE 29: NUMBER OF GRADUATES PER NUMBER OF YEARS SPENT IN THE INSTITUTION (BA)

- ***Masters' degree***

		Number of graduates per number of years spent in the institution (Masters'degree)							
Institution	**Gender**	**1 year**	**2 years**	**3 years**	**5 years**	**6 years**	**7 years**	**NR**	**Grand total**
FLSH	T							22	22
	F							2	2
Grand total	T							22	22

	F							2	2

TABLE 30: NUMBER OF GRADUATES PER NUMBER OF YEARS SPENT IN THE INSTITUTION (MASTERS' DEGREE)

➢ ***Engineer***

	Number of graduates per number of years spent in the institution (Engineer)		
Institution	**Gender**	**5 years**	**Grand total**
ESP	T	63	63
	F	11	11
Grand total	T	63	63
	F	11	11

TABLEAU 31: NUMBER OF GRADUATES PER NUMBER OF YEARS SPENT IN THE INSTITUTION (ENGINEER)

III.4 Use of the reconstructed cohorts technique

In order to further describe the functioning of the trainings under study, it is helpful to reconstruct the future of an artificial 100-students cohort by applying the previously calculated promotion rates, repetition rates, and dropout rates, as recorded in the table above, to each level of studies. This reconstruction will be performed on the grounds of a certain number of hypotheses:

i) The number of authorized repetitions is limited to a maximum of two by cycle ;

ii) The repeaters behave like graduates.

Resorting to this prospective analysis is interesting in terms of planning and helps completing the retrospective analysis that could be realized on the basis of the longitudinal data since it allows anticipating the situation that might arise if the latest enrolment conditions persist for the upcoming years. In what follows, we will tackle the case of the Faculty of Science and Technology extensively. For the other institutions, we will limit ourselves to tables of results and comments.

III.4.a The case of the FST

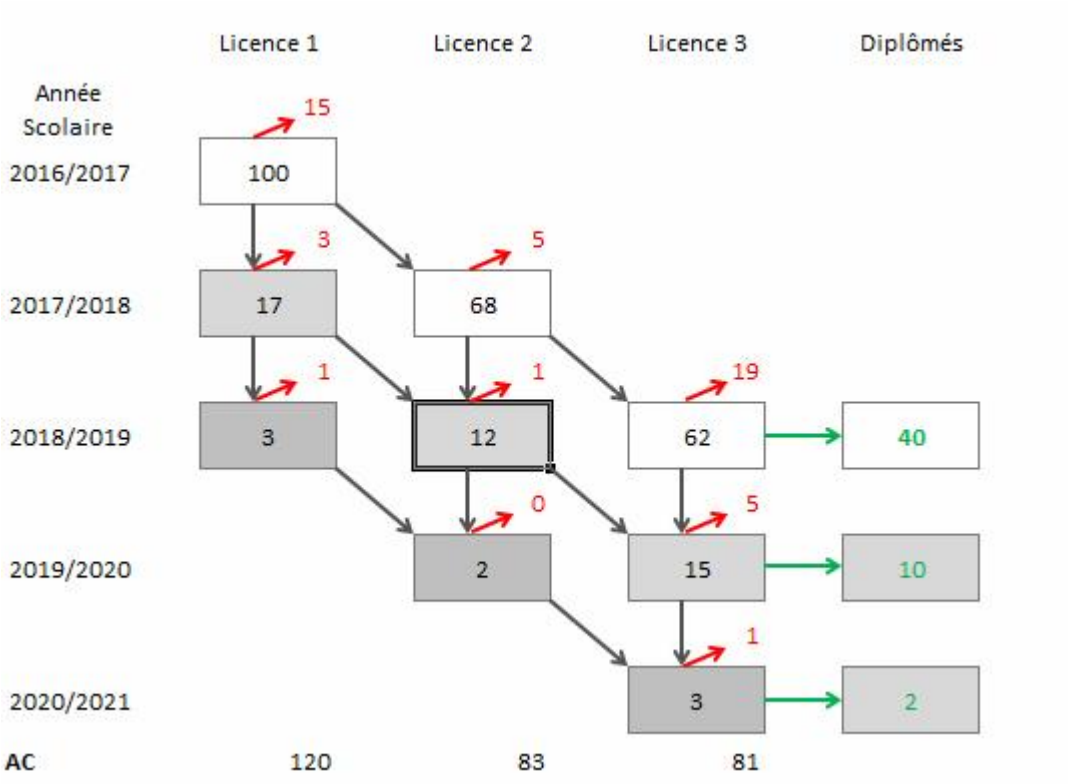
The table below summarizes the major characteristics of students' progress in a Licence program at the Faculty of Science and Technology of the University of Science, Technology, and Medicine for the years 2014-2015 and 2015-2016.

L1			L 2			L 3		
Promotion rate	Repetition rate	Dropout rate	Promotion rate	Repetition rate	Dropout rate	Promotion rate	Repetition rate	Dropout rate
68%	17%	15%	92%	1%	7%	64%	6%	30%

TABLE 32: MAJOR CHARACTERISTICS OF STUDENTS' PROGRESS IN A LICENCE PROGRAM AT THE FST

The data are already informative and describe in this case a training whose internal efficiency is good: the promotion rates are particularly high especially in second year (L2) where over 90% of the students are graduating. Repetitions are relatively important in first year (17%) whereas dropouts are more significant towards the end of the cycle (30%). It is thus obvious, as previously mentioned, that it would be necessary to consider this situation in lights of the results of similar trainings and to conduct the complementary analyses needed for the identification of adapted enhancement strategies (Should student prerequisites be questioned? And if it is so, shall a pre-qualification process be set up?; should certain subjects and/or the teaching techniques

used for them be addressed as well? etc.). The data are presented in the diagram below:



The restructuration is based on a multi-step line of reasoning:

i) Using the results of the preceding table to an artificial cohort of 100 first year students, it can be argued that 68 (being 100 x 68%) will directly pass to second year, 17 (being 100 x 17%) will repeat the school year, and 15 will dropout ;

ii) Among the 17 students repeating the first level, 11 (being 17 x 68%) will pass to second year, 3 (being 17 x 0.17) will repeat the school year, and 3 (being 17 x 0.15) will dropout;

iii) The 11 students who passed among the repeaters will encounter in second year a repeater from the group of 68 students who passed directly from first to second year. Thus, 12 students will reach second year after three years of studies (either after repeating first year, or repeating second year) ;

iv) The three students who will find themselves in first year after three years of studies no longer have the right to repeat a year: 1 (being 3 x 0.68) of them will pass. Overall, it can be argued by the same token that over the cohorts' 100 students 52 earn a diploma (40 without repetition, 10 after one repetition, and 2 after two repetitions). In fact, in an ideal functioning it would have been helpful to consume 154 student-years (52 x 3) in order to reach the same results while more has been necessary because of repetitions and dropouts through schooling. For a better understanding of the calculation of the number of student-years actually consumed, a table like the one below can be filled out

breaking down the students of the cohort by level and duration spent in the cycle.

In order to set up this table, it just takes to record the “outcomes” of the cycle (dropouts and diplomas) by duration of studies.

		L1	L2	L3	Diploma	Total	AC
Number of students who leave the FST after:	1 year	15				15 (14.7)	15
	2 years	3	5			8 (7.6)	16
	3 years	1	1	19	40	60 (60.1)	180
	4 years			5	10	15 (14.6)	60
	5 years			1	2	3	15
Total		**19**	**6**	**25**	**52**	**100**	**284**

TABLE 33: CYCLE « OUTPUTS » (DROPOUTS AND DIPLOMAS) BY DURATION OF STUDIES

- ***Internal efficiency indicators for the FST and comments***

The table below presents :

- Comments on the graduates university trainings (dropouts and diplomas);
- Some internal efficiency indicators.

Dropouts and graduates of the cohort after :	Number	Number of student-year actually consumed	Comments
1 year	**15**	15	15% drop out in first year
2 years	**8**	16	23% drop out during the first two years
3 years	60	180	After three years, 40 students out of 100 earn their Licence degree, whereas 21 dropout in third year (thus 44% of the students drop out after three years at the faculty)
4 years	**15**	60	10% of the students earn their degrees only in four (4) years of studies while 4% of them dropout after four years of studies.
5 years	**3**	15	2% of Licence students in the Faculty of Science and Technology earn their diplomas with a two-year delay
Total	**100**	**284**	284 student-year consumed to produce 51 graduates

Indicators		Comments
Number of useful student-years	154	51*3 (51 graduates)
Average number of student-years per graduate	5.46	284/51
Internal Efficiency Coefficient (CEI)	0.54	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 51 graduates and the number of actually consumed study-years is equal to 154/284 being thus 0.54
Coefficient of Expenditure Rise (CAD)	1.9	In the case of the FST, it appears that about two times the theoretical cost of studies should be spent in order to produce a Licence graduate. The cost of a graduate will be equal to 1.9 x 3 x CU where CU represents the annual cost per student; a graduate cost is thus around 5.7 x CU versus the 3 x CU that would have been theoretically necessary with no repetitions and dropouts.
Wasted student-years	130	The wasted years with reference to an ideal functioning (130 student-years) that are deduced from the difference between what has been actually invested (284 student-years) and what could have been invested as a minimum (154 student-years) originate mainly from dropouts during the studies (113 years out of the 130, being 87%), the rest being due to repetitions. This casting down offers already some lines of thinking to define strategies for the enhancement of the internal efficiency of the trainings. However, it should be said anew, the identification of such strategies requires additional investigations with the purpose of identifying the causes of the numerous repetitions and dropouts the analysis of enrolments did not unveil.
Useful repetition years	14= 10*1+2*2	The graduates with delays are : 10 graduates with one-year delay (10 useful student-years) and 2 with two-year delay (2x2 useful student-years)
Percentage of useful repetition years	14/130=11%	Only 11% of the repetition years are useful

TABLE 34: INTERNAL EFFICIENCY INDICATORS AND COMMENTS ON THE GRADUATES UNIVERSITY CURRICULA (DROPOUTS AND GRADUATES)

III.4.b University Professional Institute

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	22	22	22% drop out in first year
2 years	5	10	27% drop out in the first two years
3 years	54	161	After three years, 46 students out of 100 earn their Licence degree, whereas 8 dropout in third year (thus 35% of the students drop out after three years)
4 years	16	65	14% of the students earn their degrees only in four (4) years while 2% of them dropout after four years of studies
5 years	4	18	3% of Licence students earn their diplomas with a two-year delay
Total	100	276	276 student-year consumed to produce 63 graduates
Indicators			**Comments**
Number of useful student-years		189	63*3 (63 graduates)
Average number of student-years per graduate		4.4	276/63
Internal Efficiency Coefficient (CEI)		0.7	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 63 graduates and the number of actually consumed study-years is equal to 189/276 being thus 0.7
Coefficient of Expenditure Rise (CAD)		1.5	In the case of the FST, it appears that about two times the theoretical cost of studies should be spent in order to produce a graduate. The cost of a graduate will be equal to 1.5 x 3 x CU where CU represents the annual cost per student; a graduate cost is thus around 4.5 x CU versus the 3 x CU that would have been theoretically necessary with no repetitions and dropouts.
Wasted student-years		88	The wasted years with reference to an ideal functioning (88 student-years) that are deduced from the difference between what has been actually invested (276 student-years) and what could have been invested as a minimum (189 student-years) originate mainly from dropouts during the studies (68 years out of the 88, being 77%), the rest being due to repetitions.
Useful repetition years		20=14*1+3*2	The graduates with delays are : 14 graduates with one-year delay (14 useful student-years) and 3 with two-year delay (3x2 useful student-years)
Percentage of useful repetition years		23%	Only 23% of the repetition years are useful

TABLE 35: PROFESSIONAL UNIVERSITY INSTITUTE

III.4.c Faculty of Arts and Human Sciences

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	12	12	12% drop out in first year
2 years	5	10	17% drop out during the first two years
3 years	60	181	After three years, 18 students out of 100 earn their Licence degree, whereas 42 dropout in third year (thus 59% of the students drop out after three years)
4 years	18	74	6% of the students earn their degrees only in four (4) years while one out of 100 students of them dropout after four years of studies
5 years	5	24	1% of Licence students earn their diplomas with a two-year delay
Total	**100**	300	300 student-year consumed to produce 25 graduates
Indicators			**Comments**
Number of useful student-years		75	25*3 (25 graduates)
Average number of student-years per graduate		12	300/25
Internal Efficiency Coefficient (CEI)		0.25	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 25 graduates and the number of actually consumed study-years is equal to 75/300 being thus 0.25
Coefficient of Expenditure Rise (CAD)		4	It appears that about four times the theoretical cost of studies should be spent in order to produce a graduate. The cost of a graduate will be equal to 4 x 3 x CU where CU represents the annual cost per student; a graduate cost is thus around 12x CU versus the 3 x CU that would have been theoretically necessary with no repetitions and dropouts.
Wasted student-years		224	The wasted years with reference to an ideal functioning (224 student-years) that are deduced from the difference between what has been actually invested (300 student-years) and what could have been invested as a minimum (75 student-years) originate mainly from dropouts during the studies (204 years out of the 224, being 91%), the rest being due to repetitions.
Useful repetition years		8	The graduates with delays are : 6 graduates with one-year delay (6 useful student-years) and 1 with two-year delay (2 useful student-years)
Percentage of useful repetition years		4%	Only 23% of the repetition years are useful

TABLE 36: FACULTY OF ARTS AND HUMAN SCIENCES

III.4.d Faculty of Legal and Economic Sciences

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	20	20	20% drop out in first year
2 years	9	18	29% drop out during the first two years
3 years	46	138	After three years, 10 students out of 100 earn their Licence degree, whereas 36 dropout in third year (thus 65% of the students drop out after three years)
4 years	19	76	4% of the students earn their degrees only in four (4) years of studies while 15 out of 100 students dropout after four years of studies
5 years	6	30	1% of Licence students earn their diplomas with a two-year delay
Total	100	282	282 student-year consumed to produce 15 graduates

Indicators		Comments
Number of useful student-years	45	15*3 (15 graduates)
Average number of student-years per graduate	18.8	282/15
Internal Efficiency Coefficient (CEI)	0.16	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 15 graduates and the number of actually consumed study-years is equal to 45/282 being thus 0.16
Coefficient of Expenditure Rise (CAD)	6	In the case of the FSJE, it appears that about 6 times the theoretical cost of studies should be spent in order to produce a graduate. The cost of a graduate will be equal to 6 x 3 x CU where CU represents the annual cost per student; a graduate cost is thus around 18x CU versus the 3 x CU that would have been theoretically necessary with no repetitions and dropouts.
Wasted student-years	237	The wasted years with reference to an ideal functioning (237 student-years) that are deduced from the difference between what has been actually invested (282 student-years) and what could have been invested as a minimum (45 student-years) originate mainly from dropouts during the studies (230 years out of the 237, being 97%), the rest being due to repetitions.
Useful repetition years	6	The graduates with delays are : 4 graduates with one-year delay (4 useful student-years) and 1 with two-year delay (1x2 useful student-years)
Percentage of useful repetition years	2.5%	Only 2.5% of the repetition years are useful

TABLE 37: THE FACULTY OF LEGAL AND ECONOMIC SCIENCES

III.4.e Higher Institute of Accounting and Business Administration

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	2	2	2% drop out in first year
2 years	17	34	19% drop out during the first two years
3 years	61	183	After three years, 53 students out of 100 earn their Licence degree, whereas 9 dropout in third year (thus 28% of the students drop out after three years)
4 years	16	65	14% of the students earn their degrees only in four (4) years of studies while 2 out of 100 students drop out after four years of studies
5 years	4	19	4% of Licence students earn their diplomas with a two-year delay
Total	100	303	303 student-year consumed to produce 71 graduates

Indicators		Comments
Number of useful student-years	213	71*3
Average number of student-years per graduate	4.26	303/71
Internal Efficiency Coefficient (CEI)	0.7	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 71 graduates and the number of actually consumed study-years is equal to 213/303 being thus 0.7
Coefficient of Expenditure Rise (CAD)	1.4	In the case of the ISCAE, it appears that about 1.4 times the theoretical cost of studies should be spent in order to produce a graduate. The cost of a graduate will be equal to 1.4 x 3 x CU where CU represents the annual cost per student; a graduate cost is thus around 4.2x CU versus the 3 x CU that would have been theoretically necessary with no repetitions and dropouts.
Wasted student-years	90	The wasted years with reference to an ideal functioning (90 student-years) that are deduced from the difference between what has been actually invested (303 student-years) and what could have been invested as a minimum (213 student-years) originate mainly from dropouts during the studies (69 years out of the 90, being 76%), the rest being due to repetitions.
Useful repetition years	22	The graduates with delays are : 14 graduates with one-year delay (14 useful student-years) and 4 with two-year delay (4x2 useful student-years)
Percentage of useful repetition years	24%	Only 24% of the repetition years are useful

TABLE 38: THE HIGHER INSTITUTE OF ACCOUNTING AND BUSINESS ADMINISTRATION

III.4.f Higher Institute of Technology

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	7	7	7% drop out in first year
2 years	3	6	10% drop out during the first two years
3 years	87	261	After three years, 87 students out of 100 earn their Licence degree
4 years	3	12	3% of the students earn their degrees only in four (4) years of studies
Total	100	286	286 student-year consumed to produce 90 graduates

Indicators		Comments
Number of useful student-years	270	90*3
Average number of student-years per graduate	3.2	286/90
Internal Efficiency Coefficient (CEI)	0.94	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 90 graduates and the number of actually consumed study-years is equal to 270/286 being thus 0.9
Coefficient of Expenditure Rise (CAD)	1.07	In the case of the ISET, it appears that the theoretical cost of studies should be spent in order to produce a graduate.
Wasted student-years	16	The wasted years with reference to an ideal functioning (16 student-years) that are deduced from the difference between what has been actually invested (286 student-years) and what could have been invested as a minimum (270 student-years) originate mainly from dropouts during the studies (13 years out of the 16, being 81.2%), the rest being due to repetitions.
Useful repetition years	3	The graduates with delays are : 3 graduates with one-year delay (3 useful student-years)
Percentage of useful repetition years	19%	Only 19% of the repetition years are useful

TABLE 39: THE HIGHER INSTITUTE OF TECHNOLOGY

III.4.g Faculty of shariaa

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	19	19	19 % drop out in first year
2 years	5	10	24% drop out in the first two years
3 years	64	192	After three years, 64 out of 100 students earn the Licence degree
4 years	11	44	10% of the students earn their degrees only in four (4) years of studies
5 years	1	5	1% of Licence students earn their diplomas with a five-year delay
Total	100	270	270 student-year consumed to produce 71 graduates

Indicators		Comments
Number of useful student-years	213	71*3
Average number of student-years per graduate	3.8	270/71
Internal Efficiency Coefficient (CEI)	0.8	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 71 graduates and the number of actually consumed study-years is equal to 213/270 being thus 0.8
Coefficient of Expenditure Rise (CAD)	1.26	In the case of an average Licence degree, it appears that it takes an amount equal to the theoretical cost of studies increased by 25% to produce one graduate.
Wasted student-years	56	The wasted years with reference to an ideal functioning (56 student-years) that are deduced from the difference between what has been actually invested (270 student-years) and what could have been invested as a minimum (214 student-years) originate mainly from dropouts during the studies (38 years out of the 56, being 68%), the rest being due to repetitions.
Useful repetition years	12	The graduates with delays are : 10 graduates with one-year delay and 1 with two-year delay
Percentage of useful repetition years	21%	Only 21% of the repetition years are useful

TABLE 40: THE FACULTY OF SHARIAA

III.4.h Faculty of Arabic Language and Social Sciences

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	11	11	11% drop out in first year
2 years	9	18	20% drop out in the first two years
3 years	68	204	After three years, 56 out of 100 students earn the Licence degree
4 years	11	44	9% of the students earn their degrees only in four (4) years of studies
5 years	1	5	1% of Licence students earn their diplomas with a five-year delay
Total	100	282	283 student-year consumed to produce 66 graduates

Indicators		Comments
Number of useful student-years	198	66*3
Average number of student-years per graduate	4.27	282/66
Internal Efficiency Coefficient (CEI)	0.7	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 66 graduates and the number of actually consumed study-years is equal to 198/282 being thus 0.9
Coefficient of Expenditure Rise (CAD)	1.42	In the case of a Licence degree at the FLASS, it appears that it takes around an amount equal to the theoretical cost of studies increased by 40% to produce one graduate.
Wasted student-years	84	The wasted years with reference to an ideal functioning (16 student-years) that are deduced from the difference between what has been actually invested (282 student-years) and what could have been invested as a minimum (198 student-years) originate mainly from dropouts during the studies (64.2 years out of the 84, being 76.5%), the rest being due to repetitions.
Useful repetition years	11	The graduates with delays are : 9 graduates with one-year delay and 1 with two-year delay
Percentage of useful repetition years	13%	Only 13% of the repetition years are useful

TABLE 41: THE FACULTY OF ARABIC LANGUAGE AND SOCIAL SCIENCES

III.4.i Faculty of Oussoul Eddine

Dropouts and graduates of the cohort after	Number	Number of student-years consumed	Comments
1 year	36	36	36% drop out in first year
2 years	3	6	39% drop out in the first two years
3 years	50	151	After three years, 47 out of 100 students earn a Licence degree
4 years	9	37	9% of the students earn their degrees only in four (4) years of studies
5 years	1	7	1% of the students earn their diplomas with a five-year delay
Total	100	237	237 student-year consumed to produce 57 graduates
Indicators			**Comments**
Number of useful student-years		171	57*3
Average number of student-years per graduate		4.15	237/57
Internal Efficiency Coefficient (CEI)		0.72	The Internal Efficiency Coefficient (CEI) which is the ratio of the number of study-years consumed in an ideal situation for the 57 graduates and the number of actually consumed study-years is equal to 171/237 being thus 0.7
Coefficient of Expenditure Rise (CAD)		1.4	It takes around the theoretical cost of studies increased by 40% to produce one graduate.
Wasted student-years		66	The wasted years with reference to an ideal functioning (16 student-years) that are deduced from the difference between what has been actually invested (237 student-years) and what could have been invested as a minimum (171 student-years) originate mainly from dropouts during the studies (52 years out of the 66, being 79%), the rest being due to repetitions.
Useful repetition years		11	The graduates with delays are : 9 graduates with one-year delay (3 useful student-years)
Percentage of useful repetition years		17%	Only 17% of the repetition years are useful

TABLE 42: FACULTY OF OUSSOUL EDDINE

IV. Financial considerations

IV.1 Cost of graduates

	Number	Share of the institution in the DBC	Budget of the institution	Total	Per-unit cost_unesco	Per-unit cost _bis
Faculty of Arts and Human Sciences	2975	333160111,3	1273950925	1607111036	540205	428219
Faculty of Medicine	1092	122289358,5	598088020	720377378	659686	547700
Faculty of Legal and Economic Sciences	4249	475831029,5	1274280104	1750111134	411888	299901
Faculty of Science and Technology	3885	435067910	1406589571	1841657481	474043	362057
Professional University Institute	767	85893716,08	171616806	257510522	335737	223751
Higher Institute of Accounting and Business Administration (ISCAE)	1104	123633197,6	269554665	393187863	356148	244162
Teachers College (ENS)	601	67303941,81	565447335	632751277	1052831	940844
Higher Institute of Technology (ISET)	320	35835709,45	513614530	549450239	1717032	1605045
ISMBTU	168	18813747,46				
ESP(Engineering cycle)	104	11646605,57				
IPGEI	224	25084996,61				
ESO	18	2015758,656				
ISSM	41	4591450,273				
ISA	108	12094551,94				
ISPLTI	169	18925734,05	104955595	123881329	733026	621039
CSET	174	19485667,01				
GEU L'Académie	152	17021961,99				
Lebanese International University	235	26316849,13				
Sup' Management	51	5711316,193				
Chinguettin Modern University	224	25084996,61				
ABDELLAHI IBEN YASSIN University	245	27436715,05				
Total	***16906***	1893245325		1893245325	111987	

TABLE 43: COST OF DIPLOMAS

By contrasting the open sector and the pre-selective sector[6], it would become possible, in addition to the previously mentioned pedagogical considerations used as an example for economists, to compare directly the production cost of a graduate taking into account both the internal efficiency (a priori better in the selective sector because students lacking the necessary pre-requites are eliminated) and the per-unit cost of studies (lower in the open sector because of the big number of students in first year). For example, engineering schools that are a priori more expensive in terms of the annual CU could display, due to their internal efficiency, a lower cost for the production of a graduate as opposed to some university curricula whose annual CU is yet less important.

Financial implications of the internal efficiency measurement

The table presents the data relating to the internal efficiency of some institutions whose information is available. The per-unit cost is calculated following the techniques used by the **UNESCO/ DAKAR POLE**[7]

IV.1.a 2017/2018 per-unit cost (UNESCO/Dakar Pole)

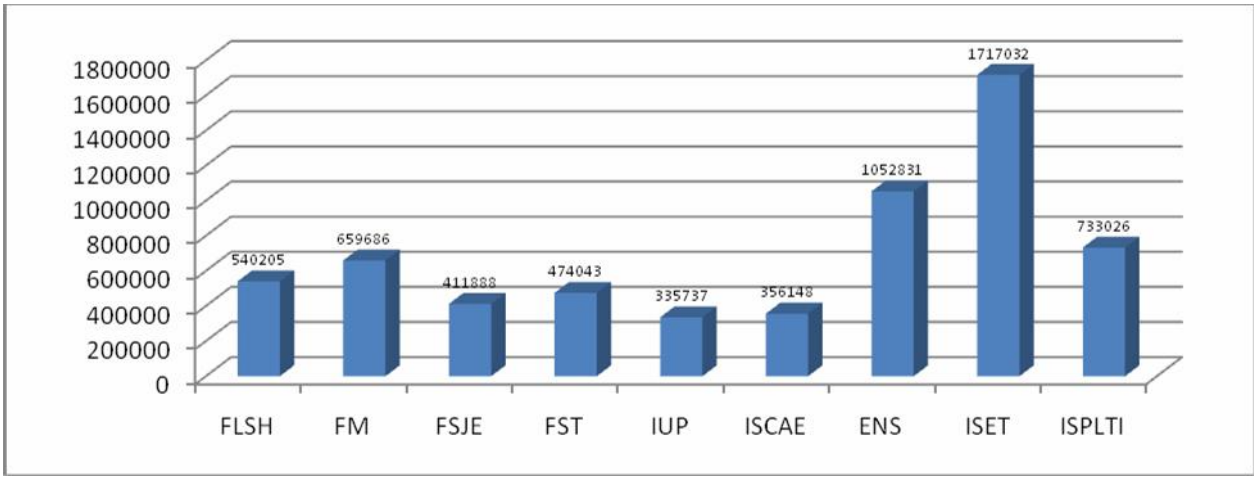


FIGURE 14: 2017/2018 PER-UNIT COST

[6] The "open sector" indicates the overall institutions which do not directly select their incoming students (besides possessing the title required to enter higher institution). The "pre-selective sector" designates the institutions which, by contrast, make an explicit selection in addition to possessing the title granting access to higher institution. Making a pre-selection has both a direct impact (some candidates being eliminated) and an indirect impact (self-selection of candidates who believe they have little chances to be selected).

[7] The calculation takes into account the budget of the central services, a data that is unavailable for the institutions not recorded in the table.

In 2017, the spending of the USIA was of 459 293 979 MRO (327 M corresponding to wages and salaries in addition to 132 M of subsidies and transfers) for 694 students, corresponding to a CU of 661 806 in exception of the spending of the central services.

Commentaire :

Institution	Annual per-unit cost of a student (CU)	CEI	CAD=1/CEI	Annual cost of graduate (CAD*CU)	Graduate cost (CAD*CU)*3	Theoretical cost of a graduate (CU*3)	Additional cost per graduate
FST	474043	0,54	1,9	900 682	2 702 046	1 422 129	1 279 916
IUP	335737	0,7	1,4	470 032	1 410 097	1 007 212	402 885
FLSH	540205	0,25	4	2 160 822	6 482 465	1 620 616	4 861 849
FSJE	411888	0,16	6,3	2 594 893	7 784 679	1 235 663	6 549 016
ISCAE	356148	0,7	1,4	498 608	1 495 823	1 068 445	427 378

TABLE 44: FINANCIAL IMPLICATIONS OF THE INTERNAL EFFICIENCY MEASUREMENT

The analysis of the internal efficiency does not just provide information about the initial organizational modes of the various trainings; it gives also additional information on the attitudes and behaviors of students. Economic theories on education do not put forward a “natural regulation” of the behavior regarding the demand for education, especially when the community is largely taking the costs of studies in charge.
In fact, the development of coping behaviors is sometimes witnessed in students who face a significant drop in their expectations of earnings in the job market. Those behaviors, whose development occurs through a reduction of the time devoted to studies, are individually rational but collectively deviants. This is reflected, no doubt, in the deterioration of the internal efficiency through time which turns, thus, into a warning signal on the adjustment of students to the evolution of the determinants of their studies’ performances.

The cost of a graduate considering the current expenditures of the institution and its share in the central services (UNESCO/ Dakar Pole)

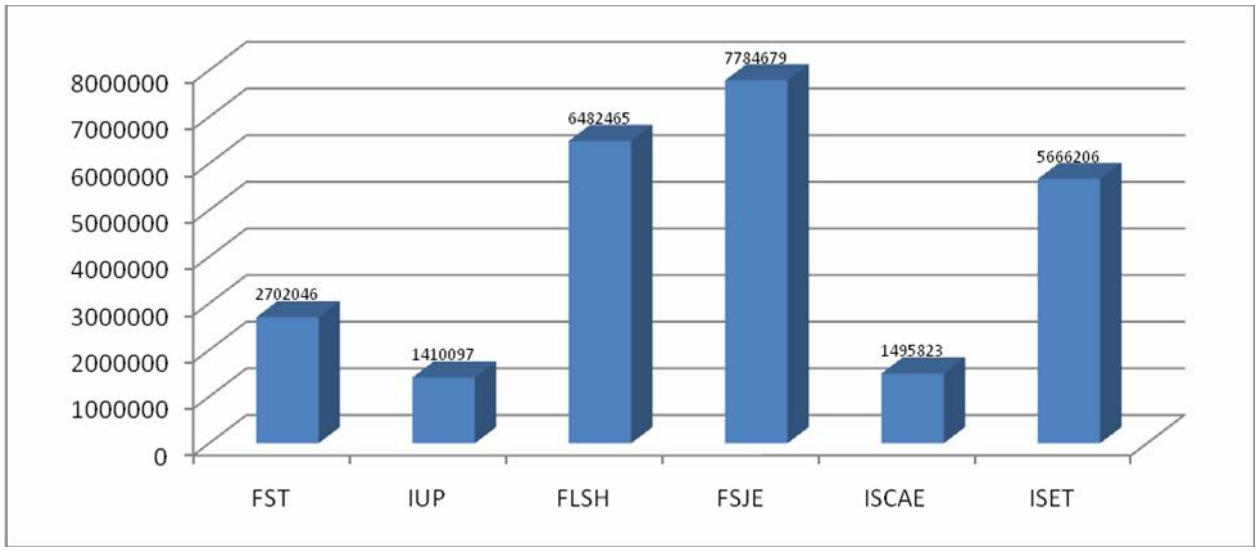


FIGURE 15 : GRADUATE COST CONSIDERING THE CURRENT EXPENDITURES OF THE INSTITUTION AND ITS SHARE IN THE CENTRAL SERVICES

IV.1.b 2017/2018 per-unit cost (Bis)

The table below shows another method for calculating some internal efficiency indicators, in particular the CEI, by using the actual number of years spent by these graduates. This allows to have another estimate of the cost of the 2015/2016 graduates.

The table below shows another method for the calculation of per-unit costs which does not take the budgets of the central services into account.

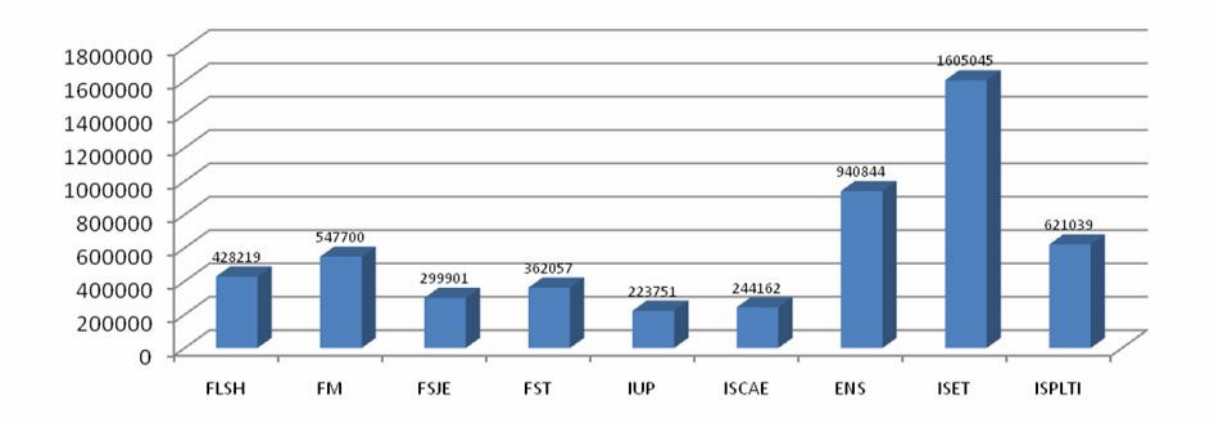


FIGURE 16 : 2017/2018 PER-UNIT COST (BIS)

Estimate of the cost of a graduate (Bis)

Institution	Annual per-unit cost of a student (CU)	CEI	CAD	Annual cost of a graduate (CAD*CU)	The cost of a graudate(CAD*CU)*3	Theoretical cost of a graduate (CU*3)	Supplementary cost per graduate	Percentage of the supplementary cosst per graduate
FST	362057	0,54	1,9	687907	2063722	1086170	977553	90%
IUP	223751	0,7	1,4	313251	939753	671252	268501	40%
FLSH	428219	0,25	4	1712875	5138626	1284656	3853969	300%
FSJE	299901	0,16	6,3	1889377	5668132	899704	4768429	530%
ISCAE	244162	0,7	1,4	341827	1025480	732486	292994	40%
ISET	1605045	0,94	1,1	1765550	5296650	4815136	481514	10%

TABLE 45: THE COST OF A GRADUATE (BIS)

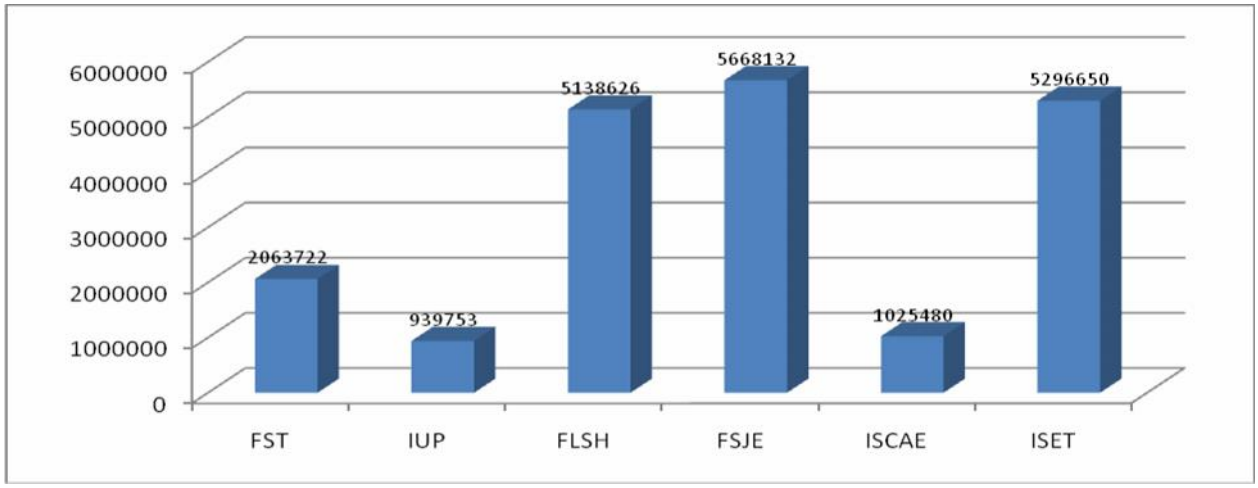


FIGURE 17 : THE COST OF A GRADUATE (BIS)

V.1.c Evolution of the percentages of Licence degrees earned in 3 years (2014/2015 and 2016/2017)

	Number of graduates in 3 years			Total number of graduates			Percentage		
Institution	2015	2016	2017	2015	2016	2017	2015	2016	2017
FLSH	227	225	80	482	356	258	47%	63%	31%
FSJE	524	483	170	844	795	249	62%	61%	68%
FST	205	240	448	349	398	540	59%	60%	83%
ISCAE	198	257	205	260	329	278	76%	78%	74%
ISET	56	56	49	67	61	60	84%	92%	82%
IUP	54	63	80	54	68	110	100%	93%	73%
TOTAL	**1264**	**1324**	**1032**	**2056**	**2007**	**1495**	**61%**	**66%**	69%

TABLE 46: EVOLUTION OF THE PERCENTAGES OF LICENCE DEGREES EARNED IN 3 YEARS (2014/2015 AND 2016/2017)

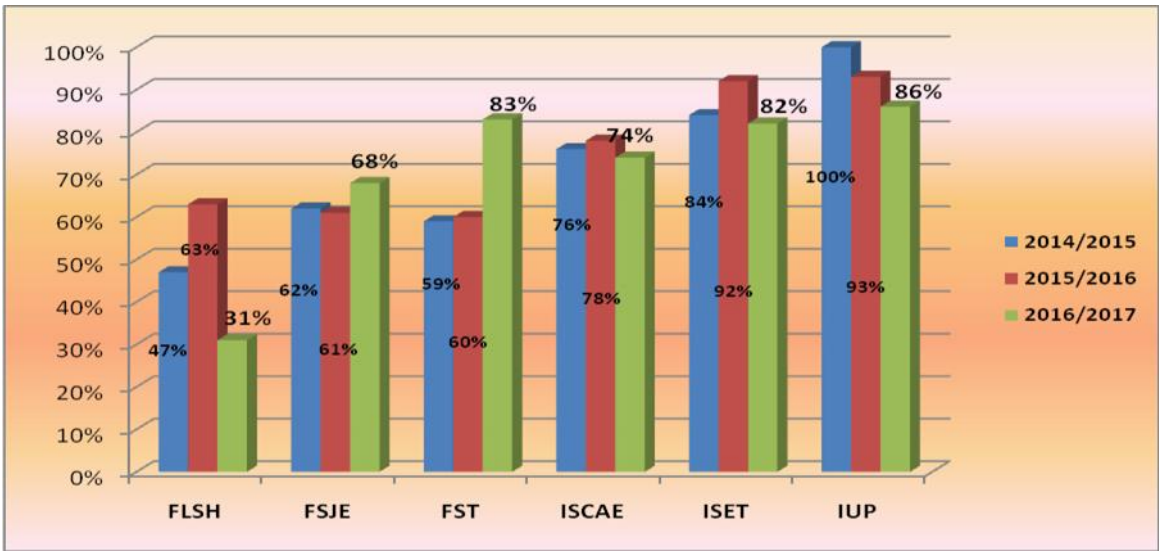


FIGURE 18 : EVOLUTION OF THE PERCENTAGES OF LICENCE DEGREES EARNED IN 3 YEARS (2014/2015 AND 2016/2017)

IV.1.d Percentage of higher education students enrolled in professional and technical trainings

Institution		*Number of registered students*				*Number of students registered in professional and technical trainings*				*Percentage*			
		2018	*2017*	*2016*	*2015*	*2018*	*2017*	*2016*	*2015*	*2018*	*2017*	*2016*	*2015*
UN	*UN-ALASRIYA*	12968	12454	8220	9183	1489	1416	372	264	11%	11%	5%	3%
USTM				4635	3958			1057	937			23%	24%
USIA	*USIA*	764	633	567	625					0%	0%	0%	0%
ENS	*ENS*	601	640	593	538	601	640	593	538	100%	100%	100%	100%
EMiM	*ESP*	496	438	79	79	272	438	79		55%	100%	100%	0%
ESP				147	156			147	156			100%	100%
ENTP				88	98			88	98			100%	100%
IPGEI				102				102				100%	
ISET	*ISET*	320	234	223	204	320	234	223	204	100%	100%	100%	100%
ISCAE	*ISCAE*	1104	1005	1114	1087	1104	1005	1114	1087	100%	100%	100%	100%
ISERI	*ISERI*	2174	2807	3264	3819					0%	0%		
ISSM	*AN*	59	41	27		59	41	27		100%	100%	100%	
ISPLTI	*ISPLTI*	169	135	126		169	135	75		100%	100%	60%	
CSET	*CSET*	174	159	162	115	174	159	162	115	100%	100%	100%	100%
ISA	ISA	108	60							0%	0%		
Chinguetti Modern University	Chinguetti Modern University	224	174	125	169				0	0%	0%	0%	0%
Sup' Management	Sup' Management	51	89	84	54	10	27	84	54	20%	30%	100%	100%
GEU L'Académie	GEU L'Académie	152	103	104	111	145	103	102	111	95%	100%	98%	100%
Lebanese International University	Lebanese International University	235	179	278	248		72	197	134	0%	40%	71%	54%
ABDELLAHI IBEN YASSIN	ABDELLAHI IBEN YASSIN	245	220	360	356		37	104	112	0%	17%	29%	31%
Total		**19844**	**19371**	**20298**	**20800**	**4188**	**4307**	**4441**	**3810**	**22%**	**22%**	**22%**	**18%**

TABLE 47: PERCENTAGE OF HIGHER EDUCATION STUDENTS ENROLLED IN VOCATIONAL AND TECHNICAL TRAININGS

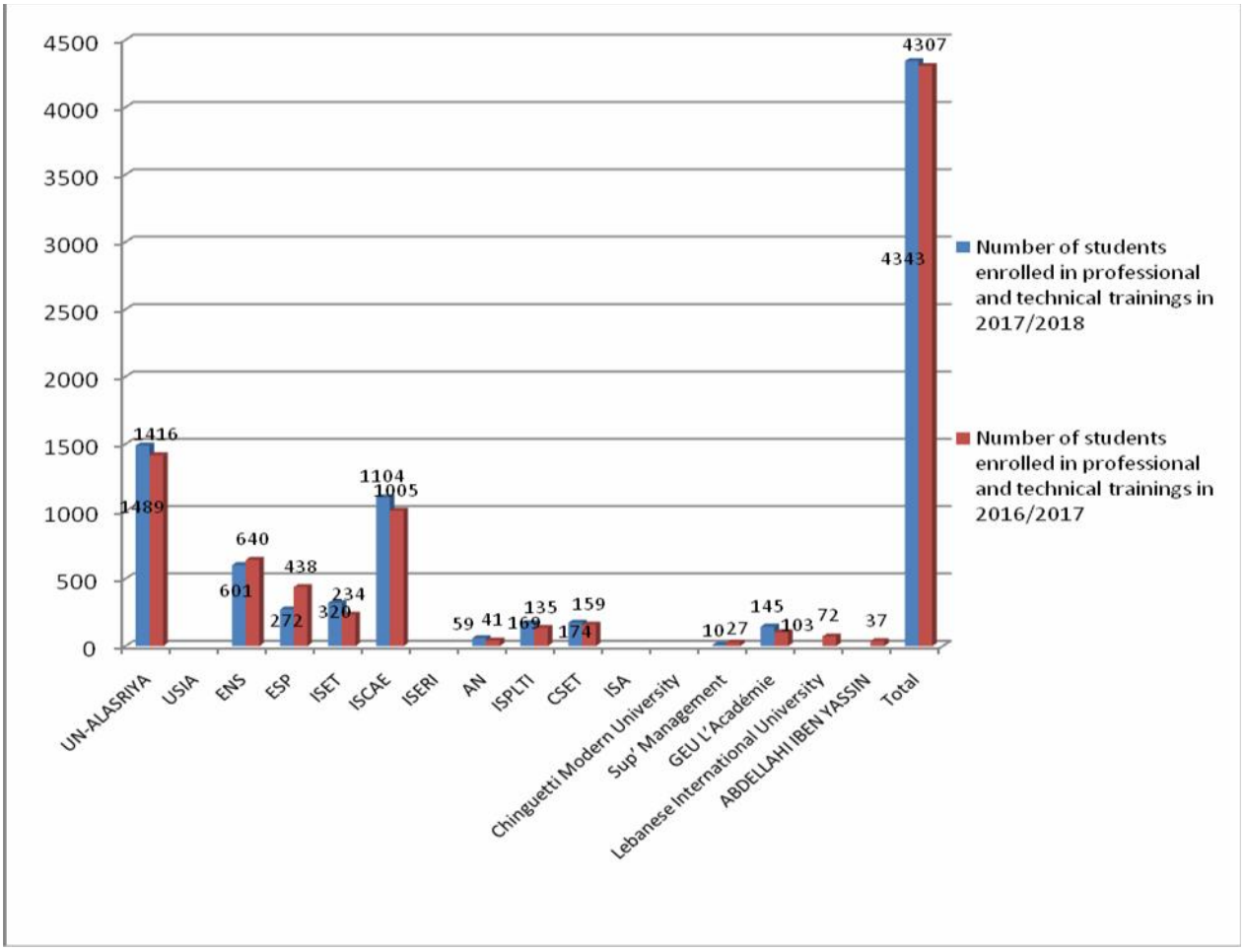


FIGURE 19 : EVOLUTION OF THE NUMBER OF STUDENTS ENROLLED IN PROFESSIONAL AND TECHNICAL TRAININGS

IV.1.e Number of professional and technical trainings

Institution	Professional training			
	Licence	Masters' degree	BTS	Engineering
CSET			7	
ESP				7
ENTP			1	
FLSH	1			
FST	8	3		
ISCAE	7			
ISET	5			
IUP	4			
ISPLTI	1			
ISSM	1			
Sup' Management		4		
GEU L'Académie	2	2		
TOTAL	**29**	**9**	**8**	**7**

TABLE 48: NUMBER OF PROFESSIONAL AND TECHNICAL CURRICULA

V . Teaching and non-teaching staff

V.1 Distribution of teachers by age group and gender

	Numbers		
Age groups	F	M	Grand total
25 to 29 years	0	5	5
30 to 34 years	3	21	24
35 to 39 years	8	40	48
40 to 44 years	9	76	85
45 to 49 years	13	118	131
50 to 54 years	8	155	163
55 to 59 years	7	141	148
60 to 64 years	2	97	99
65 years	0	7	7
ND	1	29	30
Total	51	689	740

TABLE 49: DISTRIBUTION OF TEACHERS BY AGE GROUP AND GENDER

Comments : At least seven (7) teachers will retire within one year, whereas at least 99 others will retire within the five following years.

V.2 Distribution of the administrative and technical staff by position (*)

Institutions	GENDER	Dean	Vice Dan	President	Vice President	Secretary General	Head of Department	Director	Deputy Director	Coordinator	Head of Service	Head of Division	Administrator	Senior Executives	GD Secretary	Secretary	Librarian	Accountant	Security Agent	Other Agents	Supervisor	Driver	Cook	Electrician	Office worker	IT Specialist	Laboratory Assisstant	Laborer	Clerk	Technician	ND	Total
Presidency of the UNA	T			1	3	1	1	2			1	15	33			63	1		10	23		4		4	1	8			14			185
	F										3	8	3			56	1			1		1			1				1			75
CNOU	T																															0
	F																															0
FSJE	T	1	1					2			11	11	11			37			6	15		1			5	2			16			117
	F										3	6	3			33									5				1			51
FLSH	T	1	1			1	6	2		12	2	11	7	5		23			1	27		1			2				9		21	131
	F										2	4	2	3		23				1					2						3	40
FST	T	1	1								4	2	1	1		11	7	1	14	3		1		1	5			8	7	16		82
	F												4	1		9	4	1	6	1					5			4	1	5		41
IUP	T							1			1					2	1	1	1	10									1	1		18
	F										1					2				1												4
FM	T	1	1								5		2			5	3		10	2								3	5			35
	F												2			5	2		1									1				11
ISCAE	T					1	2	2	1				2			2	1	1	1	1	1								1			16
	F												1			2	1															4
IPGEI	T							1	1		1			2					1	7	1				2							15
	F																			1	1				2							4
ISA	T												3							5		3				2						13
	F												3							1						1						5

Institutions	GENDER	Dean	Vice Dan	President Vice President	Secretagry General	Head of Department	Director Deputy Director	Coordinator	Head of Service	Head of Division	Administrator	Other Executives	GD Secretary	Secretary	Librarian	Accountant Security Agent	Other Agents	Supervisor	Driver	Cook	Plumber/ Electrician	Office worker	IT Specialist Laboratory Assisstant	Laborer	Clerk	Technician	ND	Total
CSET	T						1		2			1		1	1	1								1				8
	F								1					1	1													3
ESP	T					5					6												3					14
	F					1					1																	2
ENS	T						1		1	4				4	17	2	4	19	6	2		2		3	4	9	2	2		82
	F									2				3	8			8	2					2	2		1		28
ISET	T						1	1	4	2			7			1	11	85											112
	F																	10											10
ENTP	T						2				1	5	1	2		2	3		1	4			2		4			27
	F												1	2														3
FOD	T	1				1			1																			3
	F																											0
CSET	T								1					1	1	1	2							1				7
	F													1	1													2
ISERI	T								6	18	15	16	1	48	10	1	2	99	56	4		2		1		39	10	1		329
	F									7	6		1	31	5		1	45	24							2	6			128
Total	T	1	1	1	3	3	15	14	2	16	38	61	81	37	2	199	42	10	67	296	65	20	0	9	15	19	6	61	69	20	21	1194
	F	0	0	0	0	0	1	0	0	0	10	27	25	4	2	168	23	1	8	69	27	1	0	0	15	1	2	9	9	6	3	411

TABLE 50: DISTRIBUTION OF THE ADMINISTRATIVE AND TECHNICAL STAFF BY POSITION

(*) The data is neither complete nor exhaustive but provide an indication of the distribution of the human resources by position. They relate to the following institutions: the University of Nouakchott; the University of Science, Technology, and Medicine (in exception of the Presidency Staff); the National Center for University Services; the Higher Institute of Accounting and Business Administration; the Teachers College; the National School of Public Works; the Faculty of Oussoul Eddine; and the Advanced Technical Education Center of Nouakchott.

VI. Partnership

VI.1 Enrolled Foreign students by nationality and field of study

HOME COUNTRY	Education	Letters and arts	Health and social protection	Science	Social sciences, Commerce, and Law	Total
Germany		1				1
Saudi Arabia				2		2
Benin		1		4		5
Burkina Faso				1		1
Bulgaria		2			1	3
Cameroon		1				1
Egypt			1	1		2
France			1	1		2
Iraq			1			1
Ivory Coast				1		1
Kuwait		7		2		9
Latvia				1		1
Mali		1				1
Morocco		7		16		23
Palestine		34	16	34		84
Syria	1	1	2	6		10
Togo			5	2		7
Tunisia					1	1
Senegal		4	37	1		42
Turkey		25		3		28
The Gambia		1				1
Guinea		21				21
Kenya		1				1
Libya		1				1
Niger				2		2
Nigeria		1				1
Germany		1				1
Grand Total	1	110	63	77	2	253

TABLE 51: ENROLLED FOREIGN STUDENTS BY NATIONALITY AND FIELD OF STUDY

Attractiveness : *The table above shows that Letters and arts is the most attractive field of study for foreign students followed by the field of Social Sciences, Commerce, and Law.*

Home countries of the majority of foreign students

VII. University services

VII.1 Evolution of the number of scholarship students and aid recipients

Institution	Scholarship students and aid recipients		
	2016/2017	2017/2018	Ecart
CNOU	5608	5447	3%
USIA	565	319	44%
ENS	515	510	1%
ESP	438	496	-13%
ISET	147	215	-46%
ISERI	678	254	63%
AN	41	59	-44%
CSET	159	174	-9%
TOTAL	**8151**	**7474**	**8%**

TABLE 52: EVOLUTION OF THE NUMBER OF SCHOLARSHIP STUDENTS AND AID RECIPIENTS

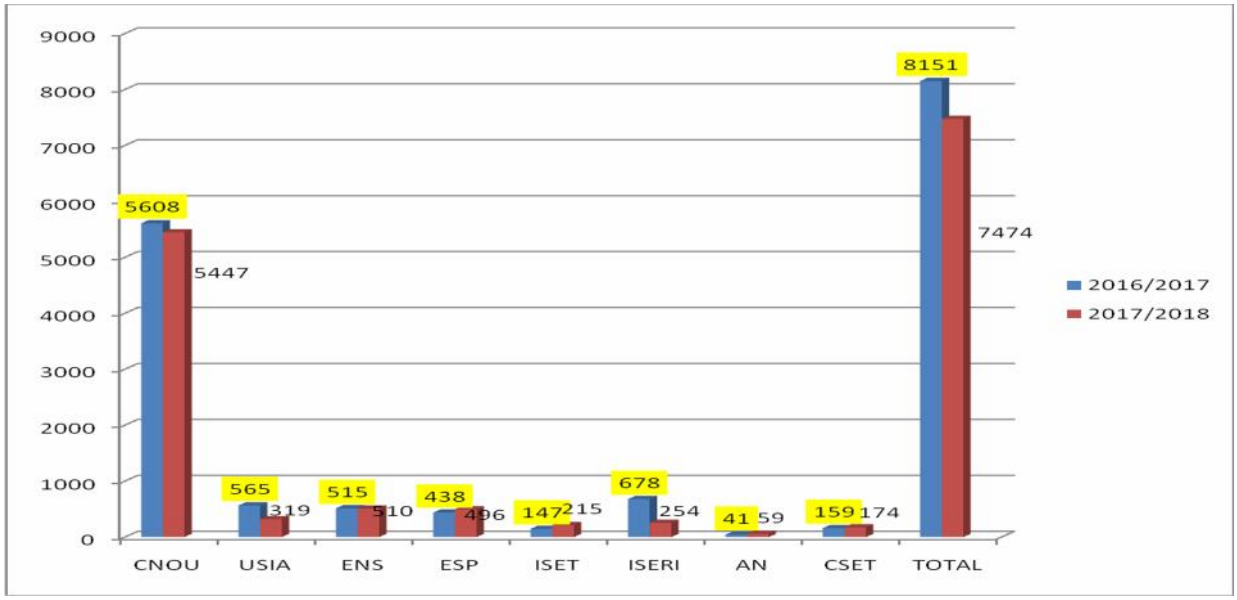


FIGURE 20 : EVOLUTION OF THE NUMBER OF SCHOLARSHIP STUDENTS AND AID RECIPIENTS

VII.2.a The National Center of University Services

Institution	Total number of Scholarship students
FLSH	*793*
FM	*933*
FSJE	*1224*
FST	*1665*
ISCAE	*382*
ISPLTI	*41*
IUP	*302*
ISA	*107*
TOTAL	***5447***

TABLE 53: SCHOLARSHIP STUDENTS OF THE CNOU

Comment :

The number of scholarship students moved from 6104 in the school year 2014/2015 to 5447 in 2017/2018. Due to legal restrictions, the CNOU has stopped to provide social aids since 2015/2016 (there were 1913 aid recipients in 2014/2015).

VII.2.b Others outside the competence of the CNOU

Institutions	Total number of scholarship students and aid recipients
USIA	319
ENS	510
ESP	496
ISET	215
ISERI	254
AN	59
CSET	174
TOTAL	**2027**

TABLE 54: SCHOLARSHIP STUDENTS OR AID RECIPIENTS_OUTSIDE THE COMPETENCE OF THE CNOU

VII.3 ACCOMODATION
CNOU Service

Number of residences	Capacity (Number of places)	Number of housed
2	95	190

TABLE 55: ACCOMODATION_CNOU

VII.4 FOOD SERVICE
CNOU Service

Number of restaurants	Number of served meals per year	Number of beneficiaries
2	231 167	212008

TABLE 56: FOOD SERVICE WITHIN THE COMPETENCE OF THE CNOU

VII.5 UNIVERSITY TRANSPORT
CNOU Service

Institution	Number of buses	Number of places per bus	Student's contribution	Government subsidy
S T P	29	75	50 ouguiyas per Rotation or a	430 ouguiya /

S T P	12	103	Monthly subscription of 1,600 ouguiya	tour

TABLE 57: UNIVERSITY TRANSPORT BY THE CNOU SERVICE

VIII. Relevance and External efficiency

In general, there is a discrepancy between the training courses in higher education and the needs of the Francophone Africa's economies.

The development strategies adopted by African's Francophone countries revolve around a number of economic diversification sectors fostering their mid and long-term growth. The analysis of the sectoral strategies of fourteen (14) countries of Francophone Africa identifies about (10) grapes recognized as priority sectors for the economic development of the region:

1. Agriculture, forestry, livestock, and agribusiness industries;
2. Fishery and aquaculture;
3. Transport and Logistics;
4. Information and Communication Technologies (TIC), Mechanics and Electronics;
5. Mines and hydrocarbons;
6. Tourism and craft trades;
7. Construction and Construction materials' manufacturing industries;
8. Cotton and Clothing, and Textile Industries;
9. Energy;
10. Health.

The implementation of these strategies will require recruiting a critical mass not only of senior executives and engineers but above all of middle level executives trained in these various fields. However, the majority of the existing trainings relate to social sciences, commerce, law, letters and human sciences. Thus, students are oriented towards curricula poorly promising in terms of employment, and unsuitable for the needs of the country in terms of economic development. This mismatch between the training fields and the needs of the economies of Francophone African countries is reflected in low integration levels of young graduates and high unemployment rates (*)

(*) Source : National Dialogue on the Future of Higher Education in Senegal

VIII.1 Percentage of higher education graduates from professional and technical trainings

Institution	Graduates	Professional training	Percentage
FLSH	280	18	6%
FSJE	248		0%
FST	540	191	35%
ISCAE	278	278	100%
ISET	60	60	100%
IUP	110	110	100%
FM	26		0%
ESP	63	63	100%
FC	76		0%
FLASS	52		0%
FOE	16		0%
ENS	320	320	100%
ISERI	661		0%
CSET	83	83	100%
Total	**2813**	**1123**	**40%**

TABLE 58: PERCENTAGE OF HIGHER EDUCATION GRADUATES FROM PROFESSIONAL AND TECHNICAL TRAININGS

VIII.2 MST Graduates in % of the total graduates

Institution	Licence Graduates	MST Graduates	Percentage
FLSH	258	9	3%
FSJE	248		0%
FST	540	540	100%
ISCAE	278	95	34%
ISET	60	60	100%
IUP	110		0%
FLASS	52		0%
FC	76		0%
FOE	16		0%
Grand total	**1638**	**704**	**43%**

TABLE 59: MST GRADUATES IN % OF THE TOTAL GRADUATES

VIII.3 Distribution of graduates by field of study

General field of study	Specialized field of study	2016/2017	2015/2016	2014/2015
Education	Education	320	265	196
Letters and arts	Languages	124	134	155
	Letters	589	345	235
Social sciences, Journalism and information	Social and Behavioral Sciences	270	730	611
	Journalism and information	201	41	35
Commerce, Administration and Law	Commerce and administration	203	195	282
	Law	165	475	692
Natural sciences, Mathematics, and Statistics	Biology and related disciplines	145	91	73
	Physical Sciences	251	223	329
	Mathematics and statistics	132	74	117
	Environment	9		
Information and communication Technologies (TIC)	Information and communication Technologies (TIC)	167	170	225
Engineering, Processing and Construction Industries	Engineering and related techniques	134	110	9
	Architecture and Building	11	22	36
Agriculture, Forestry, Fish Industry and Veterinary sciences	Agriculture	24	40	40
	Veterinary sciences	13	8	10
Services	Personal Services		0	19
	Transport Services	29	22	26
Health and social protection	Health	26	12	14
ND	ND		14	0
TOTAL		**2813**	**2971**	**3104**

TABLE 60: DISTRIBUTION OF GRADUATES BY FIELD OF STUDY

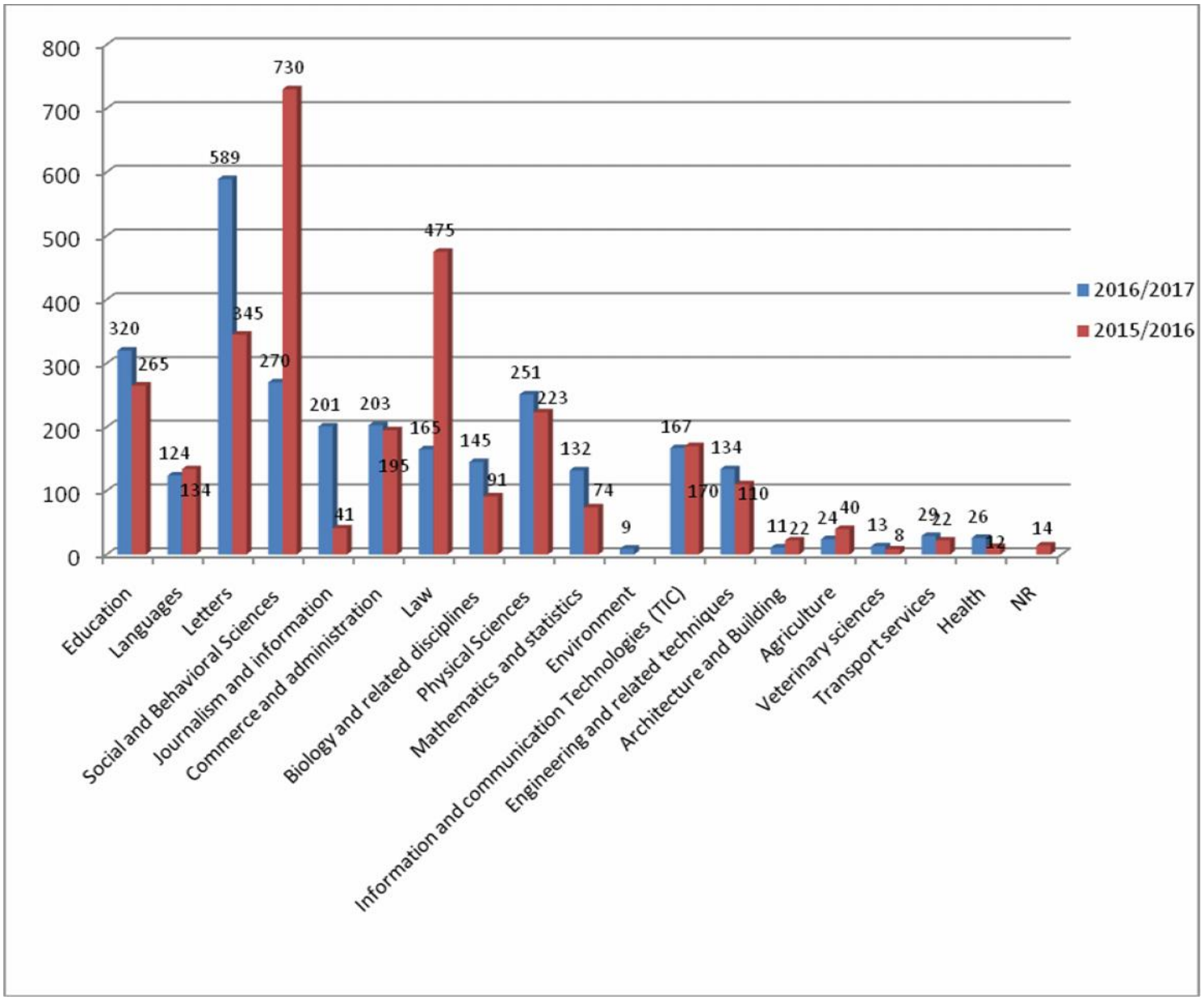


FIGURE 21 : DISTRIBUTION OF GRADUATES BY FIELD OF STUDY

VIII.4 Share of MST training students in proportion of the student body

Number of registered students	Total number of students registered in MST trainings	Percentage
19844	4343	22%

TABLE 61: MST TRAINING STUDENTS IN PROPORTION OF THE STUDENT BODY

IX. Higher Education Establishments (IES) and Students

IX.1 Distribution of IES by type and status

Type of establishment	Number	Including private
Universities	2	5
Faculties	8	0
Schools	3	0
Institutes	5	0
Centers	1	0

TABLE 62: DISTRIBUTION OF IES BY TYPE AND STATUS

IX.2 Distribution of students by field of study

	Number of students			
Fields of study	**2014/2015**	**2015/2016**	**2016/2017**	**2017/2018**
Education	544	621	655	621
Social sciences, Commerce, and Law	8543	7692	7517	7413
Letters and arts	6252	5982	4843	4865
Services	145	60	204	236
Sciences	3481	4276	4484	4947
Health and social protection	857	1012	973	1092
Agriculture	106	100	115	511
Engineering, Processing and Construction Industries	484	502	579	158
ND	388	53	1	1
TOTAL	**20800**	**20298**	**19371**	**19844**

TABLE 63: DISTRIBUTION OF STUDENTS BY FIELD OF STUDY

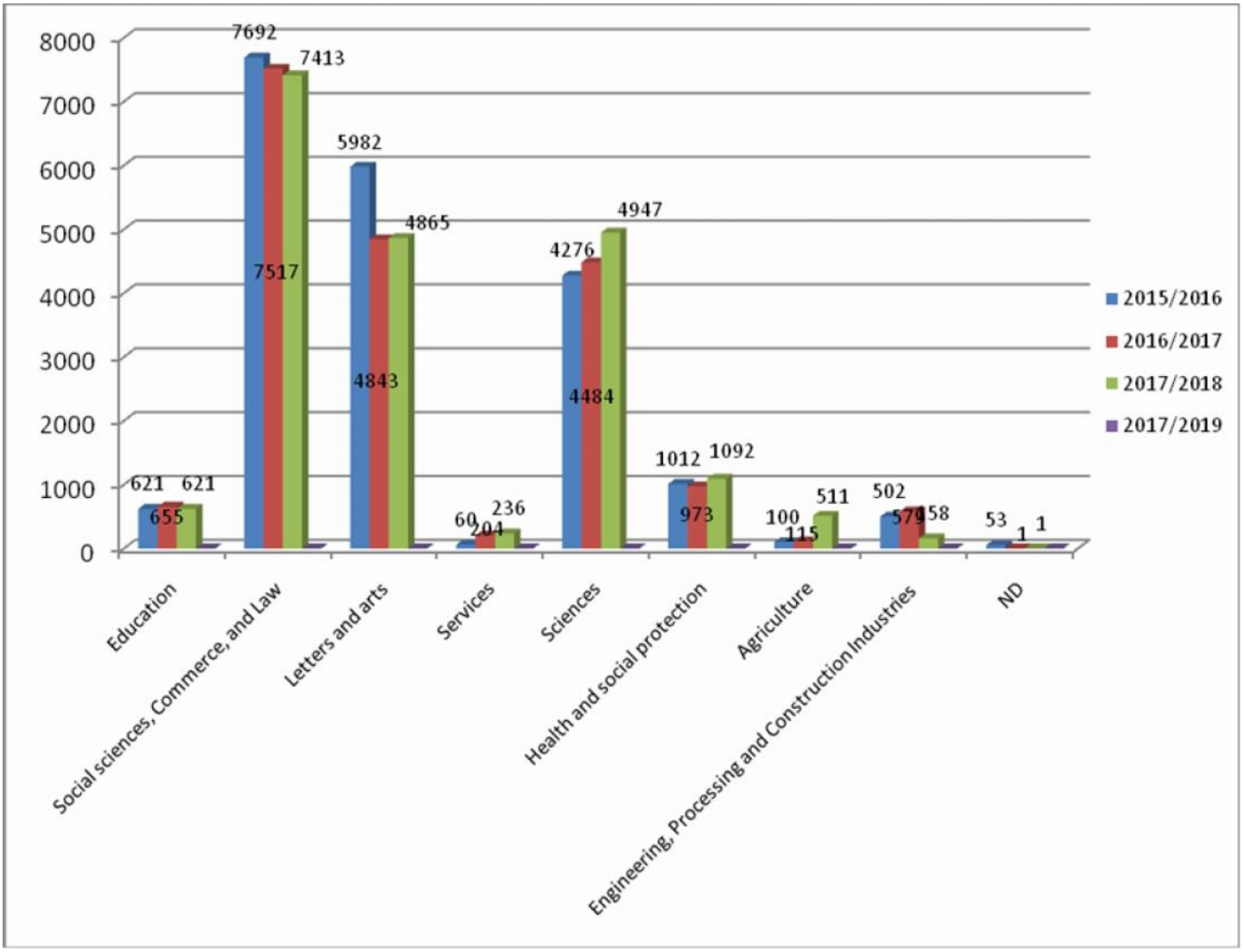


FIGURE 22 : DISTRIBUTION OF STUDENTS BY FIELD OF STUDY

IX.3 Distribution of students by field of study and status

Fields of study	Public		Private		Total	
	T	F	T	F	T	F
Social sciences, Commerce, and Law	6946	2870	467	209	7413	3079
Sciences	4870	1530	77	27	4947	1557
Letters and arts	4529	1461	336	52	4865	1513
Health and social protection	1092	419			1092	419
Education	601	84	20	15	621	99
Engineering, Processing and Construction Industries	510	78	1	1	511	79
Services	231	85	5	2	236	87
Agriculture	158	13			158	13
ND			1		1	0
Total	**18937**	**6540**	**907**	**306**	**19844**	**6846**

TABLE 64: DISTRIBUTION OF STUDENTS BY FIELD OF STUDY AND STATUS

IX.4 Distribution of students by field of study and level

FIELD OF STUDY	LMD									Others			Total
	L1	L2	L3	M1	M2	D1	D2	D3	NR	1A	2A	3A	
Social sciences,	2579	1528	1905	1111	249	33			8				7413

Commerce, and Law													
Sciences	2228	1186	1056	149	49	20	21	10	4	113	111		**4947**
Letters and arts	2112	1126	533	774	316			4					**4865**
Health and social protection	232	193	159	153	149	76	130						**1092**
Services	93	73	65	4	1								**236**
Agriculture	15	67	58							18			**158**
Education	5	5	8	1					1	304	297		**621**
Engineering, Processing and Construction Industries		33	31		1					139	232	75	**511**
ND		1											**1**
Total	**7264**	**4212**	**3815**	**2192**	**765**	**129**	**151**	**14**	**13**	**574**	**640**	**75**	**19844**

TABLE 65: DISTRIBUTION OF STUDENTS BY FIELD OF STUDY AND LEVEL

IX.5 A low development of scientific and technological trainings …

The study entitled "Higher education reforms in Africa: Elements of the general framework" made by the Dakar Pole in 2008 reveals that the distribution of students per existing training courses shows that more than half of the students (55%) are registered in faculties or schools offering training courses in Human or Social Sciences in 24 African countries for which the related data are available [(1)]. The dominant training courses are Social Sciences and Law which recruit, alone, an average of 42% of the students. By contrast, only one student out of four is registered in a scientific or technological training course. The UNESCO Institute of Statistics (UIS, 2006) concludes that short professional higher education is particularly developed in sub-Saharan Africa as it hosted 28% of the students in 2005 as opposed to 19% at the world level. It is, however, rather more developed in Anglophone Africa than in Francophone Africa. For example, it involves 57% of the students in Mauritius, 56 % in Sierra Leone, 49% in Lesotho, 41 % in Nigeria and Zambia, 39 % in Namibia, whereas it involves but 35 % of the students in Rwanda, 32 % in The Comoros, 23 % in Senegal, 18 % in Madagascar, and only 5 % in Mali and Mauritania[(1)]. This study displays the following average numbers for the 24 countries: 22.7% in Science and Technology; 41.6% in Social Sciences, Commerce, and Law; 13.5% in Letters and Human Sciences; and 22.1% in other training courses.

([1])*Source : Higher education reforms in Africa : Elements of the general framework. Dakar Pole (UNESCO-BRED).*

IX.5.a Distribution of higher education students by field of study for some African countries, in percentage, for the year 2006 or around *

Country	Year	Science and Technology	Social sciences, commerce, and Law	Letters and Human Sciences	Other Training Courses
Mauritania	**2018**	**33,8**	**37,4**	**24,5**	**4,3**
Mauritania	**2017**	**31,8**	**38,8**	**25**	**4,4**
Mauritania	**2016**	**29**	**37,9**	**29,D5**	**3,6**
Mauritania	**2015**	**23,7**	**41,1**	**30,1**	**5,2**
The Comoros	2003	10,7	38,4	29,4	21,5
Uganda	2004	12,1	40,3	5,3	42,3
Burundi	2004	13,3	28,2	14,1	44,4
Congo	2007	14,2	33,8	27,3	24,6
Lesotho	2006	14,6	34	9	42,4
Swaziland	2006	14,9	45,5	21,1	18,5

Namibia	2003	15	41	3,6	34,5
Botswana	2005	17,3	24,8	25,7	32,3
Algeria	2006	20,3	38,9	17,5	23,3
Madagascar	2006	20,8	57,7	11,2	10,4
South Africa	2006	21,7	52,9	4,9	20,5
Morocco	2006	22,4	53	17,6	7
Sierra Leone	2005	23	11	18,1	47,9
Ethiopia	2007	23,5	36,9	2,9	36,7
Mauritius	2006	24,3	35,2	19,3	19,4
Cameroon	2006	25,2	64,5	7,7	2,6
Burkina Faso	2006	25,6	53,2	11,5	9,7
Tunisia	2006	28,2	17,5	20	34,2
Djibouti	2006	28,5	43,9	23,3	4,3
Mozambique	2005	29	43,9	11,1	16
Tanzania	2004	29	20,2	7,1	26,8
Ghana	2004	30,5	12	39,1	18,4
Guinea	2006	34,2	32	11,1	13,2
Eritrea	2004	46,2	23,7	1,8	28,3

TABLE 66: DISTRIBUTION OF HIGHER EDUCATION STUDENTS BY FIELD OF STUDY FOR SOME AFRICAN COUNTRIES, IN PERCENTAGE

Countries are classified in ascending order of students registered in scientific/technological training courses.

Source : ISU data and national data for some countries.

IX.5.b Distribution of students by level and status

		LMD									Others			TOTAL
		L1	L2	L3	M1	M2	D1	D2	D3	NR	1A	2A	3A	
public	T	7074	4082	3710	2000	488	129	151	14		574	640	75	18937
	F	2616	1483	1340	652	151	39	50	1		104	96	8	6540
Private	T	190	130	105	192	277				13				907
	F	54	51	44	62	90				5				306
TOTAL	**T**	**7264**	**4212**	**3815**	**2192**	**765**	**129**	**151**	**14**	**13**	**574**	**640**	**75**	**19844**
	F	**2670**	**1534**	**1384**	**714**	**241**	**39**	**50**	**1**	**5**	**104**	**96**	**8**	**6846**

TABLE 67: DISTRIBUTION OF STUDENTS BY LEVEL AND STATUS

IX.6 Number of scholarship students abroad by level

1A		2A	3A	4A	5A	6A	7A	M1	M2	D	TOTAL
Total	123	60	151	130	115	60	69	63	202	200	**1173**
Female students	32	15	26	28	20	10	14	14	43	46	**248**

TABLE 68: NUMBER OF SCHOLARSHIP STUDENTS ABROAD BY LEVEL

IX.8 Evolution of the number of students by higher education institution (2014/2015 and 2015/2016)

Institutions		2014/2015		2015/2016		2016/2017		2017/2018	
		Number	Female students	Number	Female students	Number	Female students	Number	Female students
UN	***UN-ALASRIYA***	9183	3235	8220	2890	12454	4208	12968	4527
USTM		3958	1261	4635	1524				
USIA	***USIA***	625	154	567	176	633	208	764	318
ENS	***ENS***	538	77	593	70	640	73	601	84
EMiM	***ESP***	79	14	79	13	438	71	496	98
ESP		156	18	147	15				

ENTP		98	4	88	3				
IPGEI				102	21				
ISET	***ISET***	204	11	223	16	234	19	320	28
ISCAE	***ISCAE***	1087	540	1114	598	1005	557	1104	629
ISERI	***ISERI***	3819	1156	3264	971	2807	894	2174	731
AN	***AN***			27	0	41	2	59	5
ISPLTI	***ISPLTI***			126	55	135	49	169	69
CSET	***CSET***	115	15	162	21	159	26	174	26
ISA	***ISA***					60	10	108	25
UCHM	***UCHM***	169	16	125	0	174	21	224	43
SUP-m	***SUP-m***	54	28	84	36	89	35	51	20
UGAC	***UGAC***	111	75	104	52	103	52	152	72
ULI	***ULI***	248	116	278	141	179	92	235	135
UAY	***UAY***	356	86	360	83	220	45	245	36
TOTAL		**20800**	**6806**	**20298**	**6685**	**19371**	**6362**	**19844**	**6846**

TABLE 69: NUMBER OF STUDENTS BY INSTITUTION

IX.9 Distribution of students by level and age

Age	L1/1A		L2/2A		L3/3A		M1/4A		M2		D1		D2		D3		NR		Total	
	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F
< 18 years	66	22	9	5	1	1													76	28
18 years	221	106	24	11	1		1												247	117
19 years	549	264	111	54	22	10	9	4									1	1	692	333
20 years	847	352	265	129	62	26	7	3	1	1							3	1	1185	512
21 years	1082	412	472	200	180	94	33	15											1767	721
22 years	1149	402	626	240	371	153	77	30	8	5							1		2232	830
23 years	1116	375	701	216	558	195	129	46	11	4							2	1	2517	837
24 years	861	246	731	207	595	178	217	75	50	24	4	2	1	1			2		2461	733
25 years	601	190	521	146	563	182	220	76	59	29	18	6	4	2			2	2	1988	633
26 years	414	140	398	130	433	131	241	72	88	28	19	8	7	3	1				1601	512
27 ans	204	67	254	70	288	101	186	63	64	25	13	7	25	9	1				1035	342
28 years	146	44	191	55	207	79	160	55	71	17	16	7	20	9					811	266
>28 years	568	149	545	165	606	241	891	272	401	106	55	9	94	26	12	1	2	0	3174	969
ND	14	5	4	2	3	1	21	3	12	2	4								58	13
Total	7838	2774	4852	1630	3890	1392	2192	714	765	241	129	39	151	50	14	1	13	5	19844	6846

TABLE 70 : DISTRIBUTION OF STUDENTS BY LEVEL AND AGE

IX.10 Distribution of students by age and gender

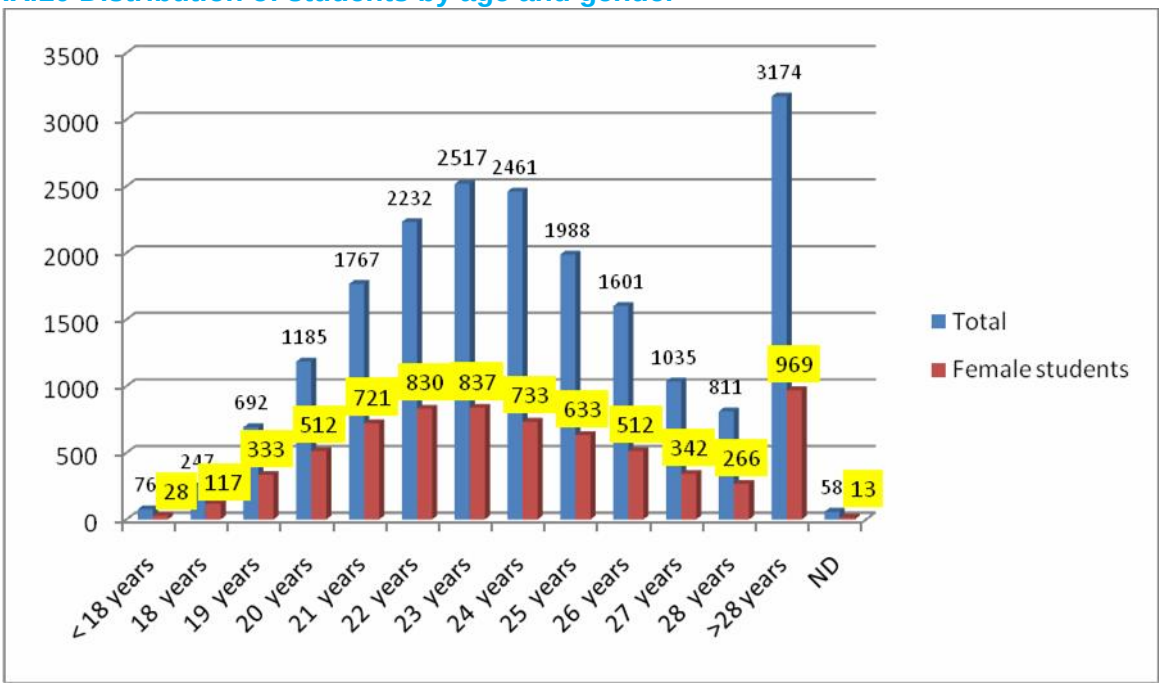


FIGURE 23 : DISTRIBUTION OF STUDENTS BY AGE AND GENDER

X. Research

X.1 Research facilities

X.1 a Distribution of research facilities by institution

In 2015, Mauritania had 53 research facilities (4 laboratories and 49 research units) distributed as follows:

Institutions	Number of facilities
FST	23
FM	2
FLSH	15
FSJE	6
ENS	7
Total	**53**

TABLE 71: DISTRIBUTION OF RESEARCH FACILITIES BY INSTITUTION

Source: 2010-2015 Situation of scientific research in higher education institutions /DRSI/MHESR 2016

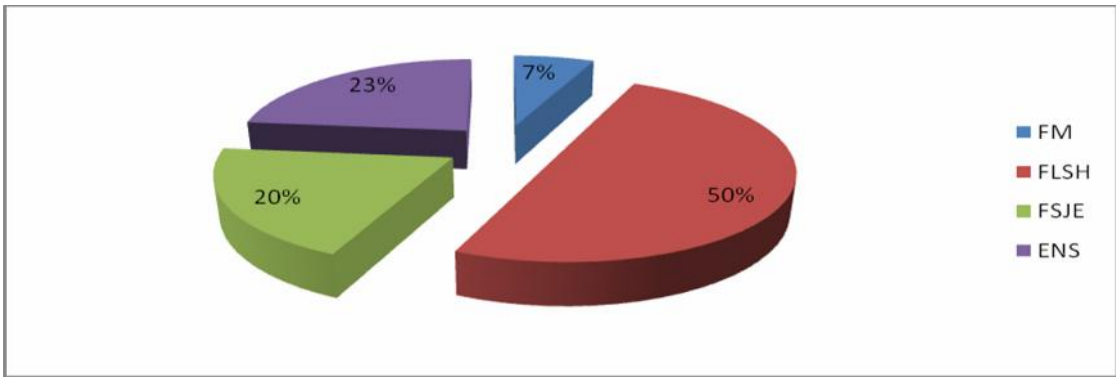


FIGURE 24 : DISTRIBUTION OF RESEARCH FACILITIES BY INSTITUTION

X-1.b Distribution of research facilities by institution and department

Institution	Department	Total
FST	Biology	6
	Physics	4
	Geology	3
	Chemistry	5
	Maths / Computer science	5
	Total1	**23**
FM	Public health	**2**
FLSH	Arabic Language and Literature	6
	French Language and Literature	2
	Philosophy and sociology	2
	History and civilization	3
	Geography	2
	Total2	**15**
FSJE	Public law	1
	Private law	1
	Economics/ Management	4
	Total3	**6**
ENS	Hard sciences	2

	Educational studies	2
	Languages	1
	Human sciences	2
	Total4	**7**
	Total	**53**

TABLE 72: DISTRIBUTION OF RESEARCH FACILITIES BY INSTITUTIONS AND DEPARTMENT

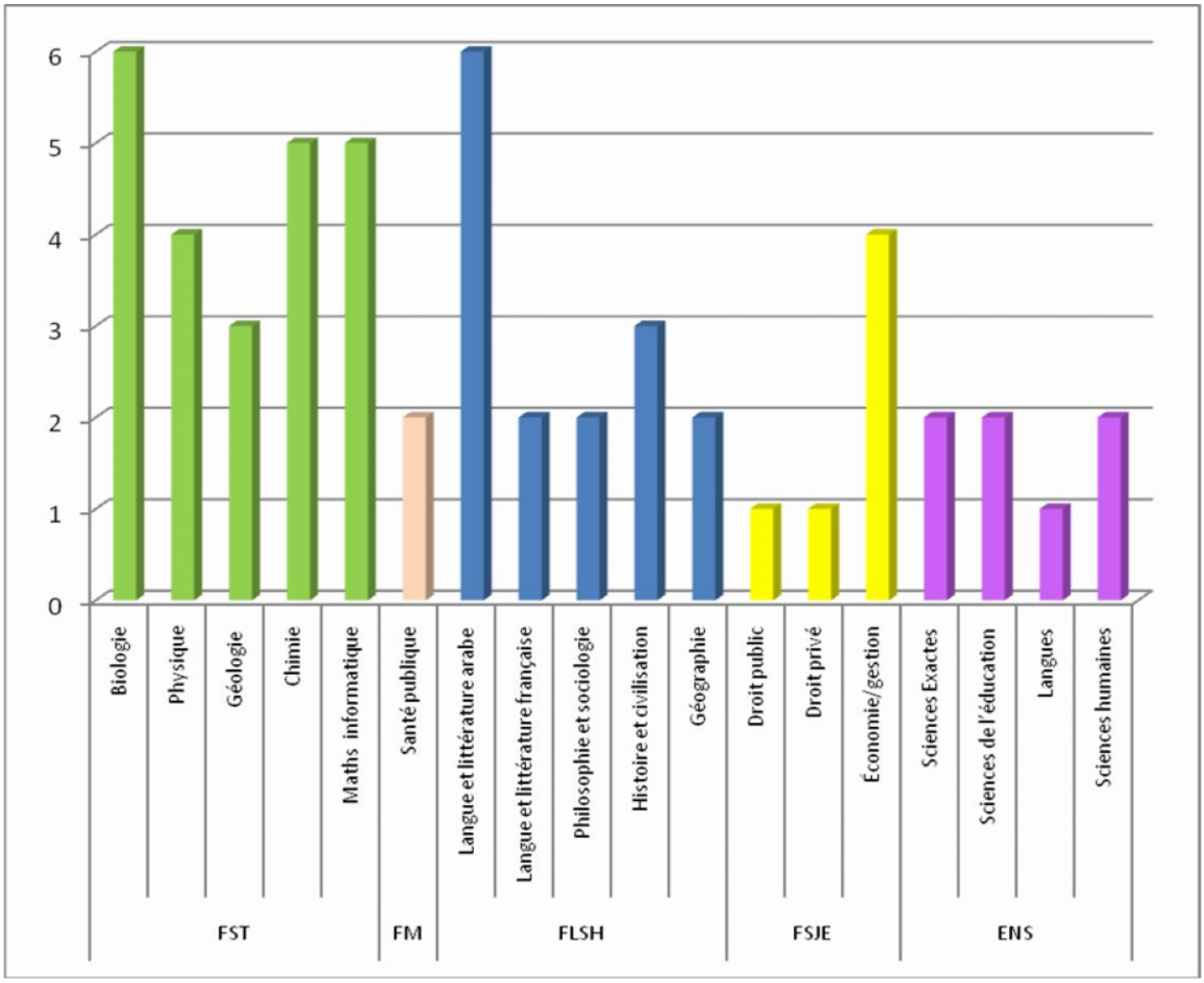


FIGURE 25 : DISTRIBUTION OF RESEARCH FACILITIES BY INSTITUTIONS AND DEPARTMENT

The Statistics presented in what follows relate to 47 research facilities. The six other units are: two (2) units in Biology, two (2) units in Geology, one (01) unit in public health, and one (01) unit in Mathematics.

X.2 Teachers-researchers involved in research facilities

The investigation of the DRSI shows that 263 teachers-researchers are involved in research facilities.

The analysis by grade reveals strong disparities in this involvement. The highest involvement rate in research facilities (83.1%) is found among teachers-researchers with the grade of Accredited Research Director (PH). This trend could be justified by the involvement of many of them in the preparation of their habilitation abroad; this, as a result, leads them to commit themselves to research and supervision of Masters' theses and doctoral dissertations.

With an involvement rate of 62.5%, University Professors (PU) are less involved in research facilities than Accredited Research Directors (PH). Many teachers-researchers of the former category have been promoted before the implementation of the new status through seniority and diplomas and not necessarily through their involvement in research.

The lowest rates are found among teachers-researchers in their early careers with a rate of 30.2% among Assistant Professors (MA) and 43% among Associate Professors (MC). These rates of involvement in research are alarming.

X.2.a Size per discipline

The average size of research facilities is 6.1 teachers-researchers (maximum=8.8; minimum=3) including for each one of them 2.8 teachers-researchers with grade of 2.8 (maximum=5.5; minimum=1.5)

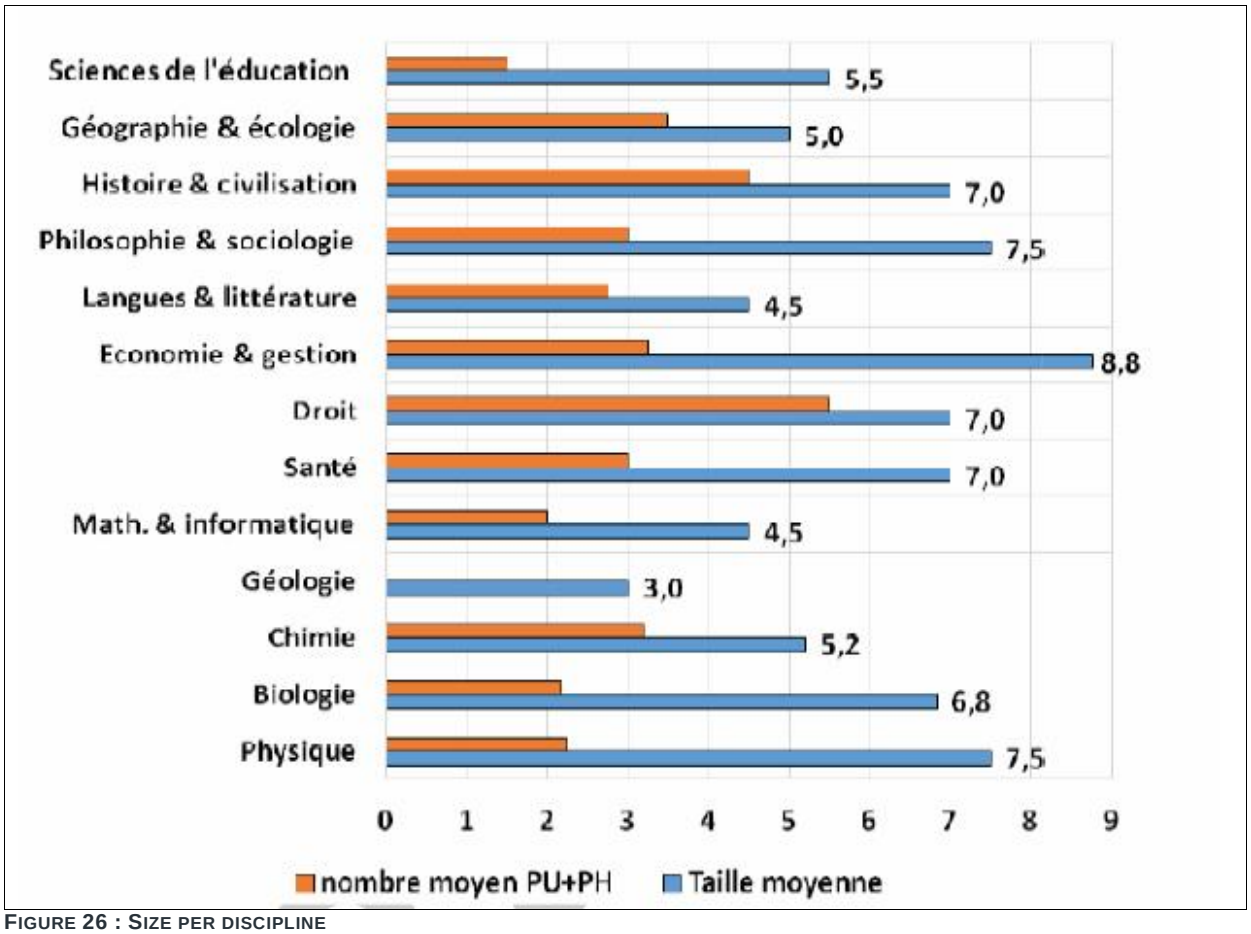


FIGURE 26 : SIZE PER DISCIPLINE

Source : 2010-2015 Situation of scientific research in higher education institutions /DRSI/MHESR 2016.

X.3 Scientific output

X.3a Scientific output by publication type

The overall scientific output by type of publication during the period between 2010 and 2015 is as follows:

- ***Distribution of publications by type of output***

Type of output	Number of outputs
Posters	105
Communication	230
Book chapter	52
Book	91
National journal	167
International Non reference Journal	107
International Reference Journal	208
Total	960

TABLE 73: DISTRIBUTION OF PUBLICATIONS BY TYPE OF OUTPUT

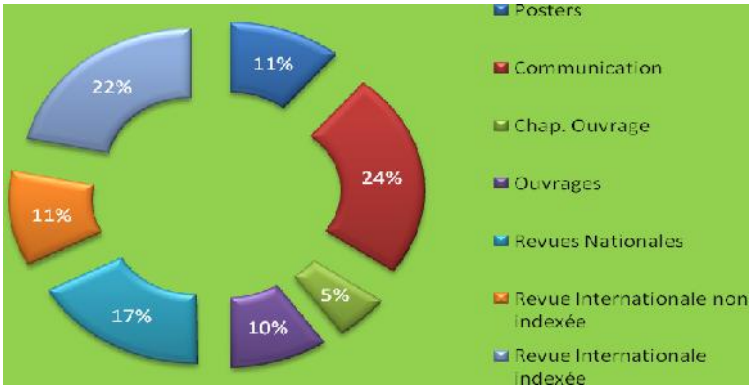


FIGURE 27 : DISTRIBUTION OF PUBLICATIONS BY TYPE OF OUTPUT

X.4 Research (continued)

The data related to research recorded in the ESRS dashboard, Mauritania 2015-2016 pages 65-66-67

X.4.a Distribution of registered and associate researchers by diploma

Institution	Département	Unit	DIPLOMA					Registered in a Masters' Programme at the	Other members in other institution
			Doctoral Thesis	ARD	PHD	cycle Doctor	Other		
FST	Biology	Unit : Food Nutrition Health (ANS)	0	0	1	4	0		
		Epidemiology and diversity of microorganisms	0	0	3	0	0		
		EBIOME	0	1	0	1	1		
		Genomes and environments	0	1	1	1	0		
		Study of the main markers of the Mauritanian population	0	1	1	0	1		
		Biodiversity and Promotion of Plant Resources	0	0	1	3	0		
	Chemistry	WATER-POLLUTION-ENVIRONMENT	0	0	4	0	1		
		Analysis and Water treatment Techniques	0	1	2	1	0		
		Chemistry of Materials	0	1	4	1	0		
	Geology	Ecosystem Dynamics and Environmental Governance	0	0	5	0	0		
		Climate Change	0	0	3	1	0		
		Geodynamics and Mineral Resources	1	0	3	0	0		
	DMI	Digital Documents and Interfaces	0	0	5	0	0		
		EDP analysis and modelisation	1	1	3	1	1	3	5
		URAGAD	1	1	2	2	0	3	6
		Mathematical Decision Sciences and Computer Science	0	1	1	1	2		
		Geometry, Topology, and Applications	0	0	2	1	0		
	Physics	Materials Sciences and Environment	1	0	3	2	0		
		Industrial systems – Information technologies	0	0	4	0	0		
		Energy New Technologies and et thermo-fluid Systems	0	2	2	2	0		
		Renewable Energies Applied Research Laboratory	1	1	4	2	0		

Continued

FLSH	History	El Maarif for historical and sociological studies and cultural heritage dissemination	0	0	2	2	1		
		Ribat for archeological and historical studies	0	0	0	2	2		
		Real estates governance	0	0	0	0			
	Arabic Language	Al Manara for studies, research, and investigations	1	0	3	3	1		

		Al Khalil Ibn Ahmed for Language Teaching	0	0	0	0			
	Philosophy	Philosophy and the Project of Society Building	1	0	2	3			
	National Languages and Linguistics	Linguistics and Didactics Research Group	0	0	2	2	4		
	French Studies	African Literature Research Group	0	1	4	1	2		
	Geography	Climate and Environmental Changes	0	0	0	0			
		Multidisciplinary University Research Group	0	0	0	0			
		Spatial dynamics and land Development	0	0	0	0			
FSJE	Private Law	Law Dynamics	1	4	4		2		
	Economics	Mauritanian Economy Research Unit (UREM)			7	2	1		
	ND			3	3		10		
ISET	GEM	Electromechanics Research Unit			1	1	1	1	13
TOTAL			**8**	**19**	**82**	**39**	**30**	**7**	**24**

TABLE 74: DISTRIBUTION OF REGISTERED AND ASSOCIATE RESEARCHERS BY DIPLOMA

X.4.b Distribution of researchers by grade

Institution	Département	Unit	Researchers per grade			
			AS4	AS3	AS2	AS1
FST	Biology	Unit : Food Nutrition Health (ANS)	0	1	4	0
		Epidemiology and diversity of microorganisms	0	0	3	0
		EBIOME	1	1	1	0
		Genomes and environments	0	1	2	0
		Study of the main markers of the Mauritanian population	1	1	0	1
		Biodiversity and Promotion of Plant Resources	0	2	2	0
	Chemistry	WATER-POLLUTION-ENVIRONMENT	0	4	1	0
		Analysis and Water treatment Techniques	1	1	2	0
		Chemistry of Materials	0	3	3	0
	Geology	Ecosystem Dynamics and Environmental Governance	0	3	2	0
		Climate Change	0	2	2	0
		Geodynamics and Mineral Resources	0	2	2	0
	DMI	Digital Documents and Interfaces	0	0	5	0
		EDP analysis and modelisation	1	1	0	4
		URAGAD	0	3	3	0
		Mathematical Decision Sciences and Computer Science	1	1	1	2
		Geometry, Topology, and Applications	0	1	2	0
	Physics	Materials Sciences and Environment	1	1	4	0
		Industrial systems – Information technologies	0	0	4	0
		Energy New Technologies and et thermo-fluid Systems	0	4	2	0
		Renewable Energies Applied Research Laboratory	1	3	4	0
FLSH	History	El Maarif for historical and sociological studies and cultural heritage dissemination	0	3	1	1
		Ribat for archeological and historical studies	0	2	0	2
		Real estates governance	0	0	0	0
	Arabic Language	Al Manara for studies, research, and investigations	0	4	3	1
		Al Khalil Ibn Ahmed for Language Teaching	0	0	0	0
	Philosophy	Philosophy and the Project of Society Building	0	2	4	0
	National Languages and Linguistics	Linguistics and Didactics Research Group	0	0	3	5
	French Studies	African Literature Research Group	0	1	5	2
	Geography	Climate and Environmental Changes	0	0	0	0
		Multidisciplinary University Research Group	0	0	0	0
		Spatial dynamics and territorial Development	0	0	0	0
FSJE	Private Law	Law Dynamics		8	1	2
	Economics	Mauritanian Economy Research Unit (UREM)		5	4	1
	ND			10	5	1
ISET	GEM	Electromechanics Research Unit			1	

TABLE 75: DISTRIBUTION OF RESEARCHERS BY GRADE

X.4.c Publications and Theses

Institution	Département	Unit	Peer-reviewed Publications		Registered in a Doctoral Programme	Registered in a Masters Programme	Number of theses defended the previous year
			Année	Nombre			
FST	DMI	Digital Documents and Interfaces					
		EDP analysis and modelisation					
		URAGAD					
		Mathematical Decision Sciences and Computer Science					
		Geometry, Topology, and Applications					
		Geometry, Topology, and Applications			**1**	2	2
FLSH	History	El Maarif for historical and sociological studies and cultural heritage dissemination	2011	17	1		1
	Center of Studies and Research		2010	12			
FSJE	Private Law	Law Dynamics	2013	2		33	5
			2010	1			
			2008	1			
			2007	1			
			2005	1			
			2004	1			
	Department of Economics	Mauritanian Economy Research Unit (UREM)	2014	6			
			2013	2			
			2012	3			
			2011	1			
			2010	1			
			2009	1			
			2008	3			
			2007	1			
			2006	1			
			2004	1			
			2003	1			
	ND	ND	2014	1			
			2013	3			
			2012	1			
			2010	1			
			2007	1			
			2005	1			
ISET	GEM	Electromechanics Research Unit	2014	3			
			2013	1			
			2012	3			

TABLE 76:PUBLICATIONS AND THESES

XI. Quality (Supervision)

The level of student supervision is far from the International Standards in Africa …

Overall high rates of pedagogical supervision, though the situation varies by country, institution, and areas of trainings.

Higher education has experienced a strong expansion in the last few years. However, engagement of teachers has not kept pace when compared with the needs to ensure satisfying conditions of supervision for the millions of new students who have accessed higher education in the last 10 or 15 years. The immediate consequence is a deterioration of the supervision rates (student-teacher ratios), which is, in Africa, higher than any other place in the world.

XI.1. Student-teacher ratios in higher education by main groups of countries and its evolution since 1991

Region*	1991		2006 or around		Rati
	Ratio	Nb of	Ratio	Nb of	
OCDE	**14,**	**27**	**15,**	**25**	**1,0**
Africa	**14,**	**31**	**20,**	**31**	**1,3**
Including low-income	15,	22	21,	21	1,3
Other countries	14,	9	19,	10	1,3
Non-Africa and Non-	**13,**	**58**	**16,**	**72**	**1,1**
Including low-income	17,	10	19,	14	1,1
Other countries	13,	48	15,	58	1,1
World	**14,**	**116**	**17,**	**128**	**1,2**

TABLE 77: STUDENT-TEACHER RATIOS IN HIGHER EDUCATION BY MAIN GROUPS OF COUNTRIES AND ITS EVOLUTION SINCE 1991

Source : Higher education dashboard – Mauritania 2015-2016

The student-teacher ratio has in fact increased by around 40% in Africa since 1991 in comparison to an increase of 20% in average at the world level. To date, this ratio is at least 40% higher in Africa than in OCDE countries (20.4 students by teacher in Africa versus 15.6 in the OCDE countries), which is a sign of the remoteness of Africa from international standards of student supervision in higher education.

Individually, African countries differ slightly in terms of the level of supervision provided for students. Supervision rates vary, thus, from an average 10 to 35 students by teacher per country. Hence, the situation is alarming in some countries like Burkina Faso, Cameroon, Ghana, Guinea, Mali, Mauritania, Nigeria, Algeria, and Egypt where the supervision rates are close to or above 30; it is less so in other countries such as Mozambique, Chad, Niger, Eritrea, or Cape Verde.

(year 2006 or around, both public and private sectors)

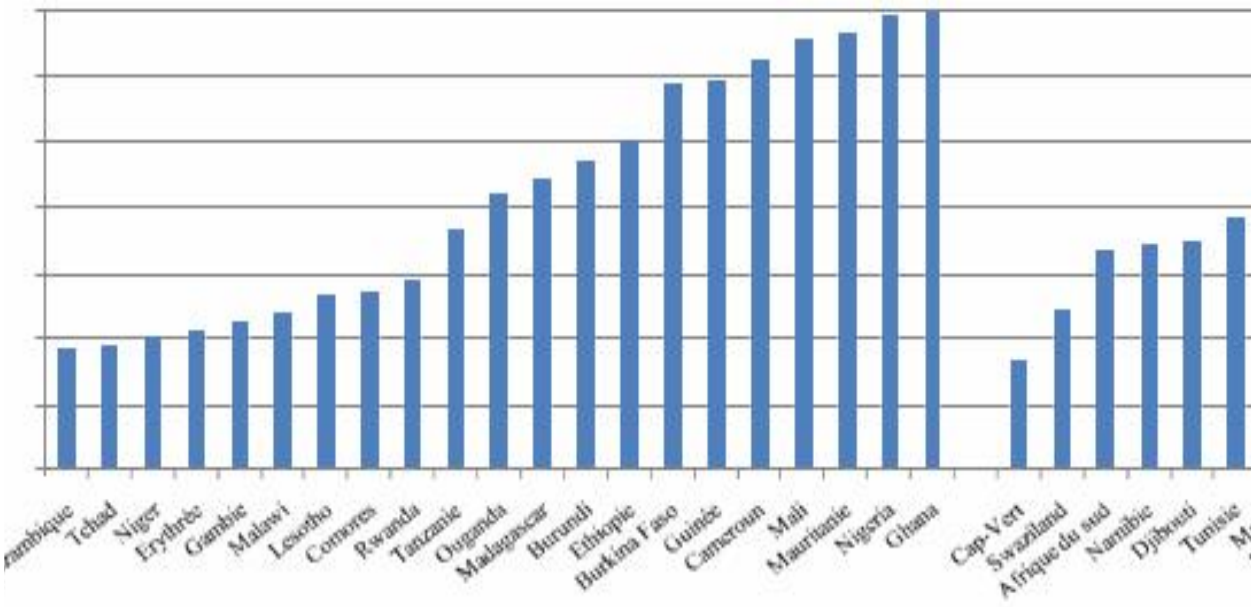


FIGURE 28 : HIGHER EDUCATION STUDENT-TEACHER RATIOS IN AFRICA
Note : A distinction is made in this figure between low-income countries (left side) and intermediate-income countries (right side).
Source : Higher education reforms in Africa : Elements of the general framework. Dakar Pole (UNESCO-BRED).

The observations made earlier are based on the « average » situation of all higher education institutions, public and private. This situation must be differentiated according to the type of institution or the offered training courses. There is not enough information to illustrate that distinction. However, the available data from over ten countries suggest the existence of a strong differentiation of the conditions of supervision by type of institution. For the relevant countries, the supervision rates appear less favorable in the public sector (as a whole) as opposed to all the private sector. This is particularly the case of Algeria, Burkina Faso, Cameroon, or Guinea as the following figure shows:

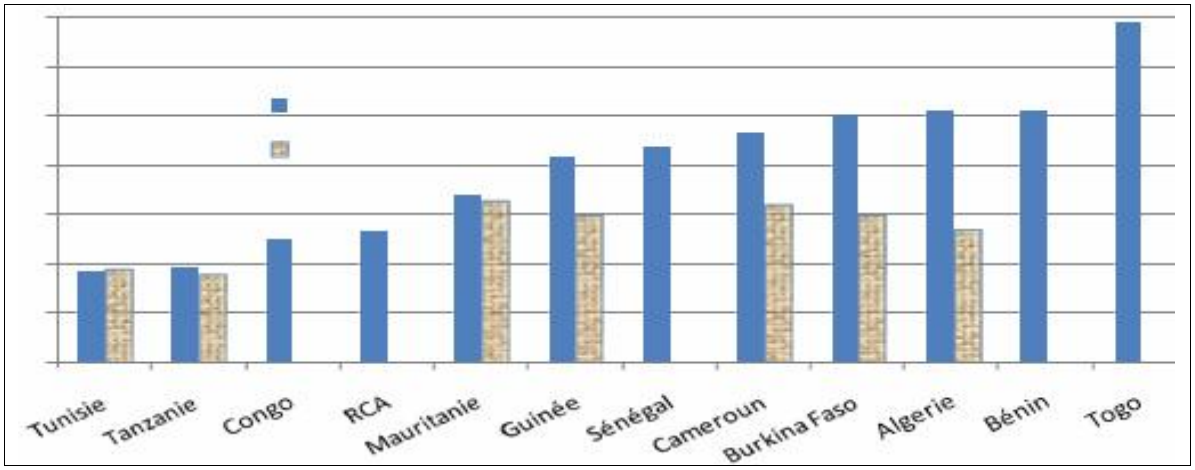


FIGURE 29 : STUDENT-TEACHER RATIOS IN THE PUBLIC SECTOR IN COMPARISON TO THE PRIVATE SECTOR

WHERE POSSIBLE, A SAMPLE OF AFRICAN COUNTRIES, YEAR 2006 OR AROUND

It should be noted in addition that the "qualitative shortage" of teachers varies by higher education institution, establishments/faculties, and training courses. In Tanzania, for example, the proportion of higher-ranking teaching staff varies from 5 to 36% by institution (18% being the average value for the whole public sector).

The data are not sufficient to provide an overview of the quantitative and qualitative problems faced by higher education institutions in the continent in terms of student supervision. The available data suggest, nonetheless, that some countries are more affected by the lack of high-ranking teaching staff (the case of Tunisia) whereas in other countries this deficit is mainly quantitative (the case of Burkina Faso or the CAR). However, it seems that in many cases the needs for teachers are both qualitative and quantitative (the case of Algeria, Cameroon, Congo, or Guinea). The low number of high-ranking teaching staff is particularly worrying in countries where the majority of teachers do not hold a doctorate degree. The most recent data available for five countries (Burkina Faso, Ethiopia, Guinea, Rwanda, and Tanzania) suggest that no more than an average of 40% of the teaching staff hold a Doctorate degree; the highest percentage among the five countries is found in Burkina Faso (69%) while the lowest is found in Ethiopia (9%).

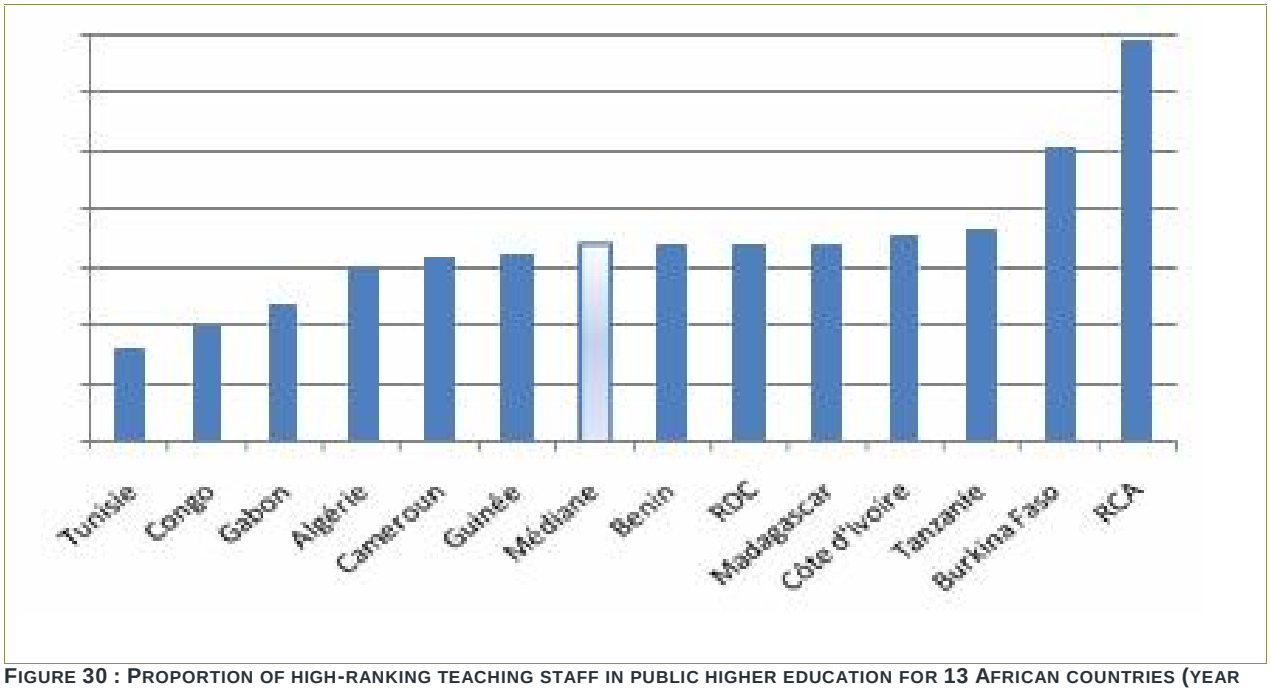


FIGURE 30 : PROPORTION OF HIGH-RANKING TEACHING STAFF IN PUBLIC HIGHER EDUCATION FOR 13 AFRICAN COUNTRIES (YEAR 2005 OR AROUND)

XI.2 Student-teacher ratio by institution

Institutions	Students	Teachers	Student-teacher ratio
UNA	12968		
USIA	764		
ENS	601		
ESP	496		

ISA	108		
ISCAE	1104		
ISERI	2174		
ISET	320		
ISPLTI	169		
AN	59		
CSET	174		
TOTAL	**18937**		

TABLE 78: STUDENT/TEACHER RATIO

XI.3 Comparison of student-teacher ratios in Mauritania and some African countries (1)

Country	Student-teacher
Mauritania (2016)	28
Mauritania (2015)	27,9
Mauritania (2009)	33,8
Cameroon (2006)	31,2
Chad (2006)	9,5
Mali (2006)	32,9
Guinea (2006)	29
Burkina Faso (2006)	29
Niger (2006)	10,4

TABLE 79: COMPARISON OF STUDENT-TEACHER RATIOS IN MAURITANIA AND SOME AFRICAN COUNTRIES

([1]) Source : National Dialogue On The Future Of Higher Education In Senegal

XI.4 Distribution of students in higher education by field of education in some Francophone African countries

Country	Science and technology	Science sciences, Commerce, and Law	Letters and Human Sciences	Others
Mauritania	29,	37,9	29,5	3,6
Algeria	20,3	38,9	17,5	23,3
Morocco	22,4	53	17,6	7

Cameroon	25,2	64,5	7,7	2,6
Burkina Faso	25,6	53,2	11,5	9,7
Congo	14,2	27,3	33,9	24,6
Guinea	34,2	41,5	11,1	13,2

TABLE 80: DISTRIBUTION OF HIGHER EDUCATION STUDENTS BY FIELD OF EDUCATION IN SOME FRANCOPHONE AFRICAN COUNTRIES

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